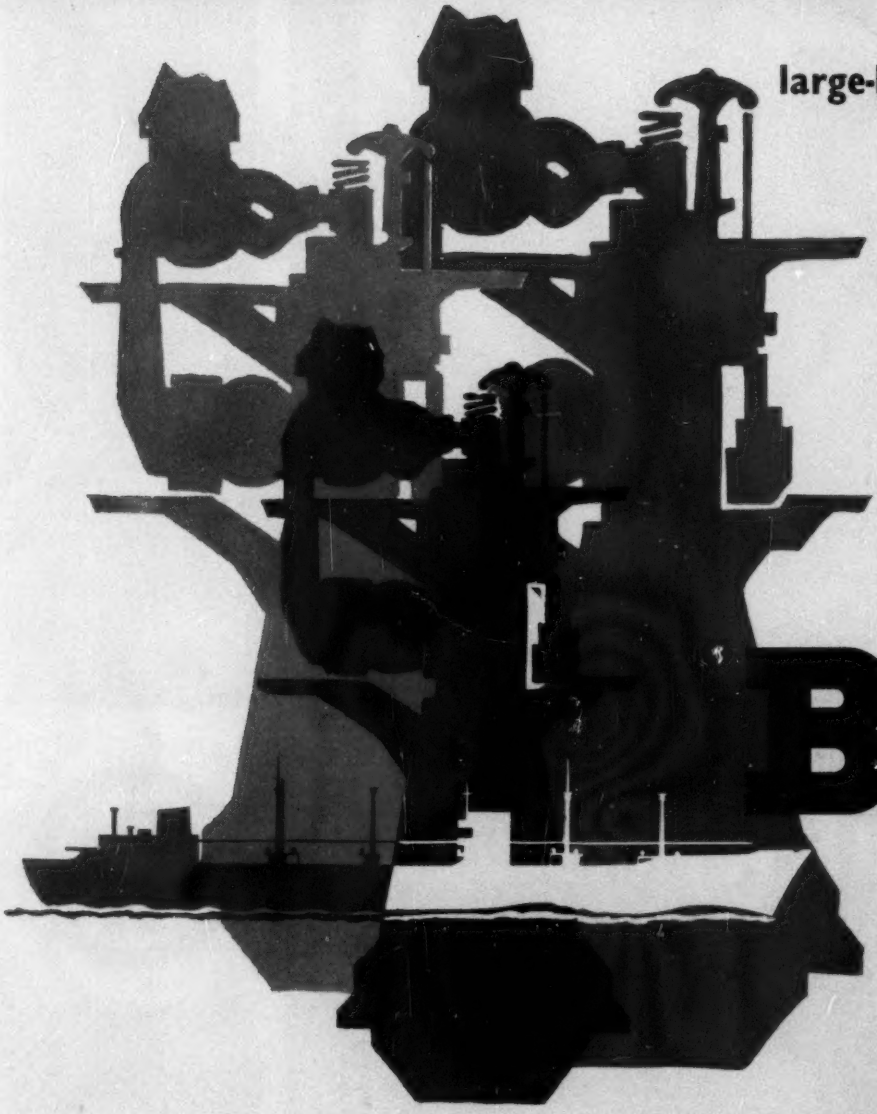
The
SHIPPING WORLD

VOL. 145 No. 3553 13 SEPTEMBER 1961 Price 2s.



large-bore high-pressure turbocharged diesel engines

. . . with a total output of 700,000 BHP have been delivered by or are on order with Burmeister & Wain and their licensees. 16 of these engines are 10-cylinder units intended for installation in tankers up to 80,000 t.d.w.

B&W

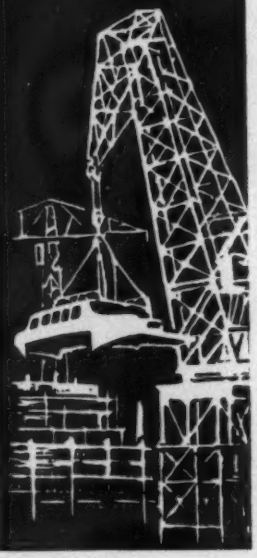
Large-bore high-pressure turbocharged B & W diesel engines have a bore of 840 mm, a stroke of 1,800 mm, and an output per cylinder of 2,100 BHP at 110 r.p.m. and a mean indicated pressure of 9.5 kg/cm² in daily continuous service under all conditions.

BURMEISTER & WAIN

Copenhagen Denmark

Sole licensee for the BRITISH COMMONWEALTH and EMPIRE: Messrs. HARLAND & WOLFF, LTD., BELFAST and GLASGOW
Sub-licensee: Messrs. JOHN G. KINCAID & CO. LTD., GREENOCK

GENOA
PALERMO
ANCONA

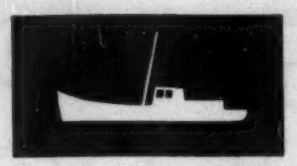


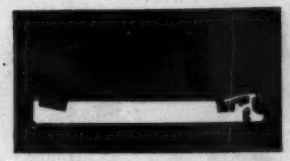
CNR

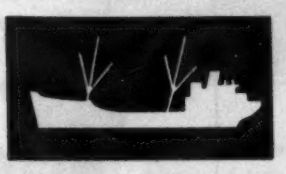
CANTIERI NAVALI
RIUNITI

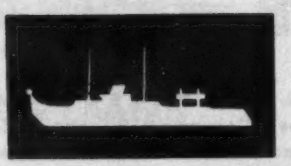
GENOA

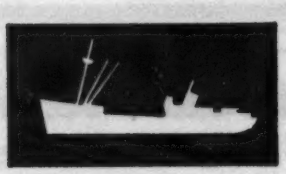
Via Cipro 11 • Tel. 5995 • Italy

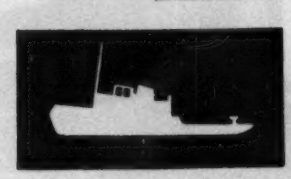


For better performance  . . .



. . .  **. send it to Saunders-Roe for Tank Testing**





An economical research and development service for marine designers and builders of all types of craft is provided by Test Tanks Department at Saunders-Roe. Analytical, and theoretical aspects of motion in water, and of naval architecture are closely studied, and a wealth of experience is at your disposal. A confidential report of all tests undertaken and all data obtained is supplied to clients.

SAUNDERS-ROE

FLUID DYNAMICS LABORATORIES: OSBORNE WORKS, EAST COWES, ISLE OF WIGHT
TELEPHONE: COWES 2211

A MEMBER OF THE WESTLAND GROUP OF COMPANIES

SABENA

GIVES YOUR CARGO
VIP *ATTENTION!*

(Very Important Package)

—to any of the 106 destinations served by **SABENA** in

AFRICA · NORTH AMERICA
MIDDLE EAST · EUROPE

INCLUDING

AMSTERDAM	GENEVA	NICE
ANKARA	HAMBURG	NUREMBURG
ATHENS	ISTANBUL	PARIS
BEIRUT	LAS PALMAS	PRAGUE
BRUSSELS	LEOPOLDVILLE	ROME
BUCHAREST	LUANDA	STANLEYVILLE
BUDAPEST	LUXEMBURG	STUTTGART
CAIRO	MEXICO CITY	TEHERAN
CASABLANCA	MILAN	TRIPOLI
COLOGNE	MONTREAL	USUMBURA
COPENHAGEN	MOSCOW	VIENNA
DUSSELDORF	MUNICH	WARSAW
ELIZABETHVILLE	NAPLES	ZURICH
FRANKFURT	NEW YORK	

For immediate through bookings consult the Air Freight expert, your FORWARDING AGENT, or SABENA CARGO DEPT. (IMPORT & EXPORT) at LONDON AIRPORT: SKYport 4321 (ext. 5443, 5375) or at the local SABENA office.

SABENA BELGIAN World AIRLINES

LONDON: SKYport 4321 (Ext. 5443, 5375)
BIRMINGHAM: MIDland 6105/6 . MANCHESTER: MERcury 1542
GLASGOW: CITy 6018 . . . . . DUBLIN 73440

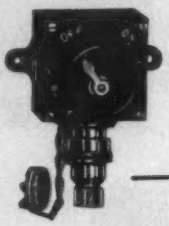
McGEOCH

LIGHTING FITTINGS
for
Engine Room, Deck and Cabin

SWITCH and FUSE GEAR and CONTROL CUBICLES

WATERTIGHT SWITCHES SOCKETS and PLUGS

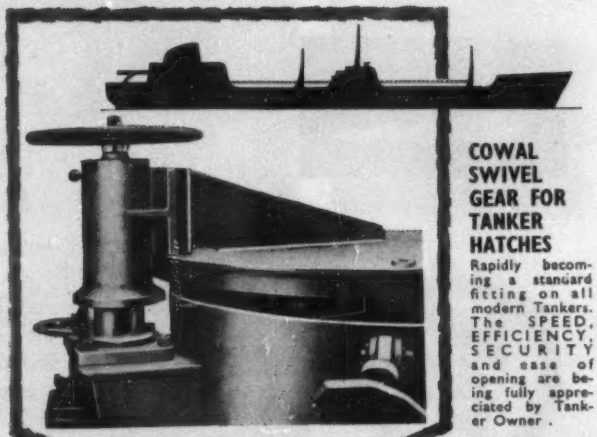
SHIPS' HARDWARE
In all metals and finishes



Registered — *Est'd.* M&G *1832* — *Trade Mark*

WILLIAM McGEOCH & CO. LTD
28 West Campbell Street, GLASGOW, W.C.2
Telephone: CEN. 7041. *Telegrams: McGeoch Glasgow*
Works: **BORDESLEY, BIRMINGHAM 10**

Hatch is opened in 8 seconds by ONE man! (WITH TOGGLES REMOVED)



COWAL SWIVEL GEAR FOR TANKER HATCHES

Rapidly becoming a standard fitting on all modern Tankers. The SPEED, EFFICIENCY, SECURITY and ease of opening are being fully appreciated by Tanker Owner.

Here are two other famous Cowal products.

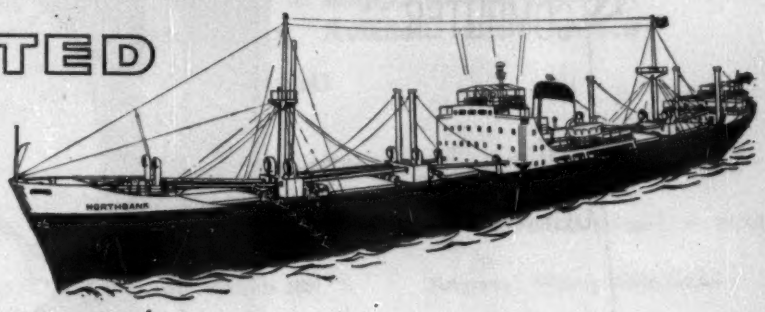
- **ENGINE ROOM SKYLIGHT GEAR**
- **WHISTLE HYDRAULIC VALVE CONTROL**

COWAL

Write for leaflet giving full details to:

COWAL ENGINEERING COMPANY LIMITED · TARBET STREET · GOUROCK · SCOTLAND

THE BANK LINE LIMITED



WORLD-WIDE SERVICES

Managers:

ANDREW WEIR & COMPANY LIMITED

Baltic Exchange Buildings, 21, Bury Street, London, E.C.3

American & Indian Line
American & Indian Branch Line
Bombay American Line
American & Oriental Line
Calcutta & Pakistan — Brazil & River Plate Service
Indian Chilean Line
Indian African Line
India Natal Line
Pakistan Africa Line
Pakistan Natal Line
Oriental African Line
U.S. Gulf — Australia Line
U.S. Gulf — New Zealand Line
U.S. Gulf — South Africa Line
U.K., Continent — Papua, New Guinea & Solomon Islands Service

UNITED BALTIC CORPORATION LTD.

21 MINCING LANE, LONDON, E.C.3

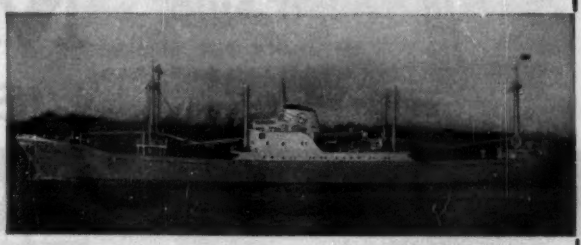
Telegraphic Address: ORIENTEAKO, London.
Telephone: MANSION HOUSE 3311. Telex.: 28130

Operating regular services:

LONDON and HULL to GDYNIA/GDANSK

LONDON and HULL to HELSINKI, KOTKA, TURKU/ABO, MANTYLUOTO and other Finnish Ports

UNITED KINGDOM PORTS to LENINGRAD and/or RIGA

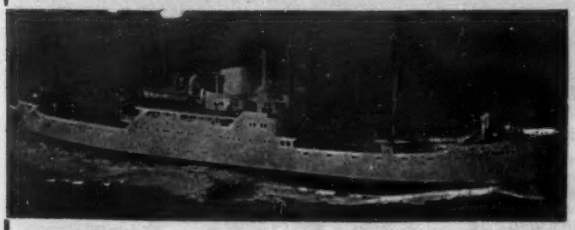


North Continental Ports to:

NORTH AFRICA, WEST ITALY and SICILY.

MAC ANDREW LINE

SPAIN AND MOROCCO Regular Services from LONDON, LIVERPOOL and Principal U.K. Ports



Express Services by fast Motorships from: LONDON and LIVERPOOL to BARCELONA

HALL'S LINE TO LISBON and GIBRALTAR. Express Joint Service by fast Motorships fortnightly from London to Gibraltar

GLYNN LINE TO WEST ITALY AND SICILY. Regular fortnightly Sailings from Liverpool to Genoa, Leghorn and Naples

For Freight and Passage apply to:

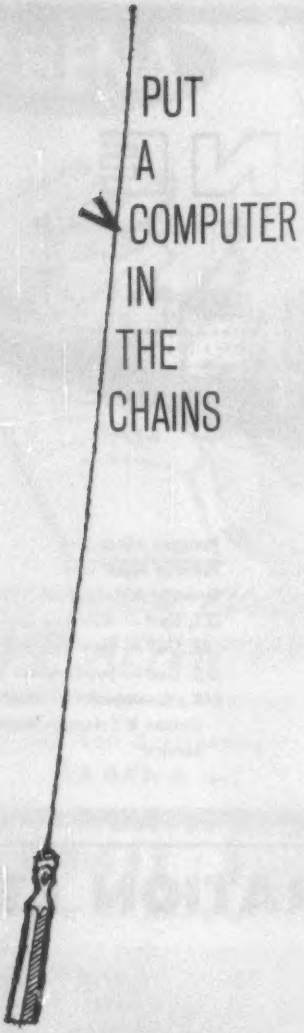
MACANDREWS & CO. LTD.

PLANTATION HOUSE, MINCING LANE, LONDON, E.C.3. Telephone: Mansion House 1541. Telex: 24227
or ROYAL LIVER BUILDING, LIVERPOOL, 3. Telephone: Central 3922. Telex: 62-334.

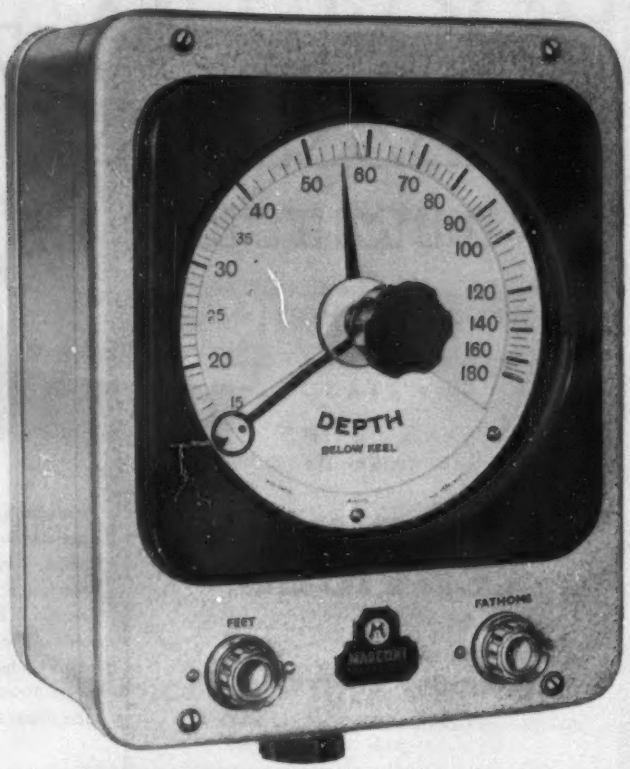
Branch Houses at: ★Barcelona, ★Madrid, ★Tarragona, ★Burriana, ★Valencia, ★Candia, ★Denia ★Carthagena, ★Almeria, ★Malaga, ★Seville and Bilbao

Branches with ★ act as Lloyd's Agents.

Agencies in all other principal ports.



PUT A COMPUTER IN THE CHAINS



MARCONI MARINE'S METRON VISUAL DEPTH METER

brings a *new* technique to echo-sounding

Computer techniques have been employed in the 'Metron' to provide a *true* indication of the depth of water—not an average over several soundings but *the actual depth at the instant when you read it.* The amplifier/integrator unit discriminates against all other echoes and re-echoes. Soundings from 14 feet to 180 fathoms are shown on a large circular scale.

One switch on the control unit selects a 'feet' or 'fathoms' scale, and all other adjustments are made automatically by the integrator unit.

The 'Metron' will normally be used in conjunction with a 'Seagraph III' recorder, and any number of remote meter units can be fitted.

MARCONI MARINE

maintain expert service facilities in all principal ports of the world

THE MARCONI INTERNATIONAL MARINE COMMUNICATION COMPANY LIMITED, ENGLISH ELECTRIC HOUSE, STRAND, LONDON, W.C.2. *Tel: COVent Garden 1234*

M73

The SHIPPING WORLD AND WORLD SHIPBUILDING

The Oldest Weekly Journal devoted to Shipping, Shipbuilding, Marine Engineering, Shiprepairing, Aviation and Finance

FOUNDED 1883

Chairman of The Shipping World Ltd: F. D. H. BREMNER

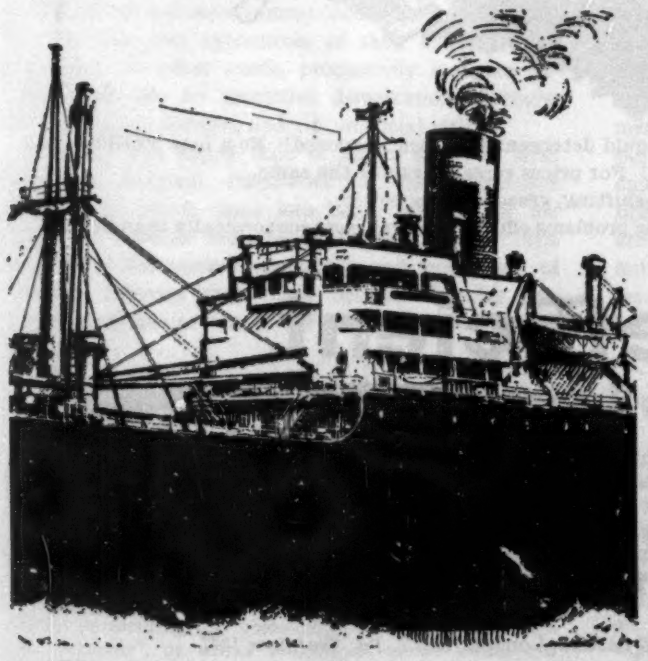
Editor: PETER DUFF *Associate Editor:* IAN BREMNER *Advertisement Manager:* W. MURRAY

Annual Subscription £5

Offices: 127 Cheapside, London EC2 *Telephone:* Monarch 2801 *Telegrams:* Shipping World, London

Vol. 145 **13 SEPTEMBER 1961** **No. 3553**

Shipyard Productivity	195	London's Airports	210
Current Events	195	Air Charter Market	212
On the "Baltic"	198	Oil Topics	213
News from Overseas	199	Recent Ship Sales	213
Some Aspects of Automation in Ships—I	201	New Contracts, Launches, Trial Trips	214
Oil Tanker *Atalante*	204	Maritime News in Brief	215
Recent Technical Developments	209	Fifty Years Ago	216



Fast freight services of the "Blue Riband" fleet

COVERING THE WHOLE OF THE EAST COAST RANGE OF U.S.A. PORTS FROM MAINE TO FLORIDA

The Atlantic "Blue Riband" holder s.s. "United States" is flag ship of a fast fleet of over fifty-five Company-owned ships offering the following freight services:

EUROPEAN SERVICE

from	to
LONDON, SOUTHAMPTON	NEW YORK, BOSTON
LIVERPOOL	PHILADELPHIA
MANCHESTER, GLASGOW	BALTIMORE
DUBLIN & GERMAN	HAMPTON ROADS
DUTCH, BELGIAN, FRENCH	WILMINGTON N.C.
& SPANISH PORTS	CHARLESTON
	SAVANNAH, JACKSONVILLE
	& MIAMI

FAR EAST SERVICE

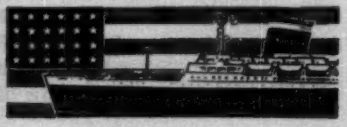
Nine 20-Knot "Mariner" vessels sail between U.S. East Coast Ports and Far Eastern Ports.

AUSTRALIA SERVICE

Regular sailings between U.S. East Coast ports and Australia.

HEAD FREIGHT OFFICE: 38, LEADENHALL STREET, LONDON, E.C.3.

United States Lines



SHELL and TEEPOL are registered trade marks

Hard to believe, but TEEPOL, Shell's master liquid detergent has been improved! Now new TEEPOL is 50 per cent more efficient! And at no extra cost! For prices remain exactly the same.
There's nothing to touch TEEPOL for sheer dirt-shifting, grease-killing power.
New TEEPOL is designed to solve *all* your cleaning problems effectively, even *more* economically than before.
A little TEEPOL goes even further now!

50% more efficient

new TEEPOL

Look for TEEPOL in the striking new tin. Available in 1 gallon and 4 gallon tins and in 45 gallon drums.

SHELL

Shell Chemical Company Limited

Regional Offices:

London Villiers House, 41-47 Strand, London, W.C.2. *Tel: Trafalgar 1277*
Birmingham Gloucester House, 65 Smallbrook, Ringway, Birmingham, 5. *Tel: Midland 8811*
Manchester 144-146 Deansgate, Manchester, 3. *Tel: Deansgate 2411*
Glasgow Royal London House, 48-54 West Nile Street, Glasgow, C.1. *Tel: City 3391*
Belfast 16-40 Rosemary Street, Belfast, Northern Ireland. *Tel: Belfast 26094*
Dublin 33-34 Westmoreland Street, Dublin, Republic of Ireland. *Tel: Dublin 72114*

THE SHIPPING WORLD

SHIPYARD PRODUCTIVITY

IT IS surprising, to say the least, and regrettable, that it took nearly two years for the productivity team which visited Swedish shipyards in October 1959 to publish its report. However it is equally surprising, and most satisfactory, to find a high degree of unanimity among the employer and trade union members of the team, although it is emphasised that the report is a joint statement by the team members, and does not necessarily represent the views of the employer or trade union organisations. However that may be, the team has produced a clear and concise picture of conditions in the shipbuilding industry in Sweden. It has found that shipyard productivity is higher in Sweden than in the United Kingdom; and it attributes this, in effect, mainly to the relatively high output rate, or productivity, of individual labour. This arises "from the allowable flexibility of labour and the discipline of both labour and employers—flexibility in that any man within the industry is free to do any work which is within his physical and technical ability, and discipline in that labour and management each respect and honour the decisions and agreements of their elected representatives." In other words, productivity is higher because there are no restrictive demarcation practices, no inter-union disputes and no unofficial strikes.

Basically this happy state of affairs seems to stem from the national framework of labour/employer organisation which came into being in 1938 for the whole of Swedish industry; and there can be little doubt that the mutual confidence and recognition of common interests that exists between Swedish employers and unions has arisen from this. As the team reports: "it is reasonable to believe that the flexibility and discipline of labour relations did not just happen but are the effects brought about by the external influence of legislation—primarily that agreements can be enforced by law, and secondly that abortive negotiations must be openly aired before a Government mediator. In Sweden the State has established the freedom of industry to order its own affairs, but has supplied the disciplinary measures necessary to ensure that that responsibility is discharged." The team concluded that it appeared to them that the success of Swedish shipbuilders was based on the "acceptance by labour that the prospects and prosperity of the industry lay in employers being allowed full responsibility for administration, equipment and manning, while labour hired their services on properly negotiated terms in the full knowledge that, unless each side played its part to the full, the required results would not be forthcoming."

Arising from these findings the team suggests that the Shipbuilding Employers' Federation and the Confederation of Shipbuilding & Engineering Unions should set up a joint committee to investigate the whole question of the use of manpower in British shipbuilding. This committee might also consider the arrangements in Swedish yards affecting welfare, apprenticeship, works councils, production planning and redundancy, to see if any of them could be introduced in Britain, to the advantage of the industry and all who are employed in it. It is to be hoped that this committee will be set up as quickly as possible and produce results in less time than it took for the productivity team to produce its otherwise excellent report.

Current Events

"Enterprise Councils"

WHAT seems to have impressed the productivity team whose report is discussed above a great deal was that employers and workers alike, in the Swedish shipyards, appeared to have the same objective in view, namely not only to maintain good relations and avoid any stoppage of work, but also to cooperate in improving output. One method of securing this objective is the system of "enterprise councils", or works committees as we would call them. These provide regular contact between management and employees, with the object that they should further production, since it is recognised, as it does not seem to be in Britain, that increased production is the best means of improving the standard of living. The employer has to keep the workers' representatives informed about the technical and financial situation of the establishment, thereby making it possible for employees to submit their ideas and views for the improvement of production and working conditions. This equally gives the employer a chance of providing such information as is required to dispel possible misunderstandings about the firm and its position. It is incumbent on the employer to provide the committee with continuing production reports, explaining alterations undertaken or planned and any other important changes in production or working conditions in the firm. Information is also given relating to new production or new methods and other technical arrangements. Members of these committees must be over 21 years of age, and must have worked for the firm for at least a year. They are elected, and serve for two years.

It is interesting to note that meetings are held, not less than once a quarter, outside normal working hours, although payment is made for attendance. The productivity team stated that "the working of these committees appeared to us to be admirable. They control, advise on and promote many matters arising within the establishment, including canteen management, washing facilities, transport arrangements and social functions." In addition, their objectives are to promote employment security and safety and satisfaction in the work; and to promote vocational training within the firm and generally to enhance good production and working conditions. These councils cannot but do good and are an example to industry in general.

Different Methods—and Attitudes

SOME interesting differences between Swedish and British shipyard working are revealed in the productivity report. Notable variations from British practice were found in the more extensive use of standardisation of parts and miscellaneous fittings, the common use of built-up sections and of a rolled sheerstrake in place of a stringer bar. The team noted that the accepted principle was to produce to a carefully controlled assembly schedule. "The progressive state of completion of the hull during the building cycle was very obvious, so far as both steelwork and outfit work were concerned. Keen attention is paid to planning and control to ensure that all parts are in compartments and spaces before they are closed up and that the hull work is completed progressively with no loose ends to clear up at a later date." Outfit facilities are subdivided to main trades only (metalwork, woodwork, electrician etc). The steelwork "equipment shop" for example, produces all metalwork of an outfit nature, such as cargo hatches, ladders and steel cupboards, while the woodworker undertakes production of all woodwork from furniture to hatch covers and keel blocks. It was noted that certain machines which need two or more men to operate in Britain were being operated by one man. Similarly the number of workers engaged in certain processes was less than the number employed in Britain. For example, workers on assembly work are allowed to do their own slinging, tacking and miscellaneous chipping and burning, and operate the welding machine as necessary; and for steelwork at the berths a man is allowed to do his own slinging, erecting, fairing and miscellaneous work necessary to get the job done. In general, "no evidence was noted of strict trade demarcations and each man was allowed freely to do his own service work to suit the manning of the job judged to be most economical by the management." Another marked difference is that time and motion study is accepted by employers and unions in Sweden. Members of the team saw such studies being carried out, and they comment that "it is not unusual for trade union members to request a time and motion study operation to be rechecked if they consider either that the number of men on an operation can be reduced or that the time for the operation can be speeded up."

"Last Nails in the Coffin"

MR D. S. TENNANT, general secretary of the Merchant Navy & Airline Officers' Association, is not accustomed to mincing his words, especially when addressing an audience like the Trade Union Congress on the subject of the Government's latest White Paper on the reorganisation of national transport undertakings: "The White Paper puts the last nails in the coffin of a co-ordinated transport system, and the corpse in the coffin will be coastwise shipping. Let me say this for Mr Marples—he is getting coastwise shipping off the seas quicker than Hitler with his E-boats and U-boats. Before long, there will be a monument going up 'sunk without trace by Government stupidity.'" Today the coasting fleet was half what it was in 1939. In the last three years the tramp coasting fleet had been reduced by a further 150 ships. In the next few years its carrying capacity may be reduced by a further 250,000 tons. Nearly 50 per cent of the coastwise fleet up to 1,000 tons was over 20 years of age, and no newbuilding was taking place. In Mr Tennant's opinion, and many coastal shipowners will agree with him, the 1953 Transport Act was largely responsible for the position, and the White Paper was the "result of political expediency taking precedence over transport requirements, and the taxpayer footing the bill."

Disbursement Clauses on Hull Policies

MANY of the Liberty type ships now trading are insured for values in the region of $500,000, and some owners have, in fact, adopted the use of the Dual Valuation Clause to give a more realistic valuation for total loss purposes. With the low market values which have prevailed for these vessels in the sale and purchase market, this was perhaps the wisest course. Indications now are that current market values for this type of vessel are rising, and some of these owners are probably considering a revision of their insurance values under the Dual Valuation Clause to cover this upward trend. The difficulty arises when, in consultation with his insurance broker, the shipowner examines the operation of the Joint Hull Formula for increases and decreases in value. A straightforward increase in value under this formula is obtained by paying a *pro rata* average premium based on 50 per cent of the increase in value at the existing "all risks" rate and 50 per cent at the "total loss" rate for the vessel. Thus while reductions in value are calculated at the total loss rate, the corresponding increase in value carries an enhanced rate of premium, and at the present time, although the owner requires a higher insured value on total loss to cover the upward trend in secondhand prices, the current earnings of the vessel do not warrant increased insurance costs. A wider understanding of the correct use of the additional insurances permitted under the Disbursements Clauses in hull policies may provide at least a temporary solution to the problem.

A Flexible Margin

UNDER more normal trading conditions the conventional practice adopted in the British insurance market of insuring a vessel for 80 per cent of its value against "all risks" and the balance of 20 per cent under the miscellaneous description of "shipowners' interests"—namely disbursements and excesses, increased value and charter hire or freight for time—was a useful one. In his insurance on these subsidiary interests the shipowner secured a flexible margin of insurance cover which he could rearrange within the limits imposed by the Disbursements Clause without disturbing the valuation and the rating of his hull policy, which was his main insurance cover. The underwriters were also assured of a fixed ratio between these subsidiary insurances and the main hull valuation which was the controlling feature of the liability under the policy, with the added safeguard that a breach of the Disbursements Clause would give rise to serious consequences. The correct use of subsidiary insurances in conjunction with a suitable valuation in the hull policy thus operated to restrict the hardships of the Joint Hull Formula because periodic fluctuations in the vessel's value over a wide range could be absorbed by a rearrangement of the subsidiary insurances.

American Transport Policy

THE United States Secretary of Commerce recently requested groups and organisations in the transport field to submit statements of their views for consideration in an overall transportation policy study he is making at the request of President Kennedy. He has now received extended replies from two maritime management and two labour organisations. Speaking for the American Merchant Marine Institute, Mr Ralph E. Casey called first of all for a policy which will make full compliance with cargo-preference legislation "mandatory for all agencies of the Government." He also urged "governmental efforts to rehabilitate our domestic merchant marine," and for legislation to correct mail rate inequities, to reduce the burden of paperwork requirements borne by ocean ship operators, and to create "a more healthy climate in the area of labour relations." Vice-Admiral Lyndon Spencer, for the Lake Carriers' Association, urged the following six-point plan to assist Great Lakes shipping: (1) tax, trade-in and mortgage benefits to encourage new ship construction; (2) extension of the differential-subsidy law to cover Lake vessels; (3) continuation of bulk commodity transport exemptions under the Interstate Commerce Act; (4) preservation of toll-free use of the Great Lakes; (5) retention of Panama Canal Act provisions against the owning of an interest in a ship by a competing railroad; and (6) continuation of cargo preference and institution of necessary additional measures to increase government-sponsored grain shipments from Great Lakes ports. The reply of the Maritime Trades Department of the AFL-CIO called for extension of construction subsidies to all segments of the merchant marine, and of operating subsidies to all competing with foreign shipping.

Lawyers and Longshoremen

A UNITED STATES Supreme Court decision of 1946 started the rapidly growing practice of workers injured while working in ships in port claiming damages on the grounds of the ship being "unseaworthy." The decision was in favour of an injured longshoreman who claimed that a falling scaffolding had made the vessel "unseaworthy." Lawyers have found that it is easier to win cases this way than by establishing negligence on the part of shipowners. Representative Herbert C. Bonner, chairman of the House Merchant Marine Committee, has introduced an amendment to Title 46 of the United States Code which would bar the use of the "warranty of seaworthiness" doctrine in personal injury claims of this nature, but apparently longshoremen and lawyers alike are opposing this amendment. An article in the *Maritime Reporter* of August 15 gives some instances of the absurdities of this ruling. In one case a longshoreman who created an overhang of potash by misuse of an automatic unloader, contrary to instructions from his superior, was fatally injured when this overhang fell on him, yet his family collected damages on the grounds that the overhang of cargo created by him made the ship "unseaworthy." The law making the shipowner responsible for the seaworthiness of his vessel was designed to protect seamen who must live and work in that vessel. Shoreside maritime workers are protected by the same legislation that applies to all industries, where it is necessary to prove negligence in order to obtain damages. It is stated that some lawyers are attempting to extend the seaworthy doctrine to piers, but how does one make a pier "seaworthy"? Application of the doctrine to ship-repairing workers is equally absurd.

Unique Engine Repair

JUST over four months ago the Strick Line cargo motorship *Baltistan*, while in the Persian Gulf, ran into main engine trouble resulting in a badly distorted crankshaft. Hitherto this type of damage has necessitated towage costing many thousands of pounds, as no suitable repair facilities are available in that area. Consultation between the owners and the North Eastern Marine Engineering Co Ltd resulted in a unique method of temporary repair being adopted to enable the vessel to make her own way home, where a new crankshaft awaited her at Wallsend. This repair involved the fitting of eccentric bushes to accommodate the distortion of the shaft. Measurements were cabled home, replacement parts and technicians were flown out, who, with the ship's staff, worked day and night with temperatures up to 120 degrees to complete the job. After satisfactory trials the vessel sailed home, without escort, via the Suez Canal, having successfully passed through the monsoon. The vessel's safe arrival confirms the practicability of this new method of repair.

A Gas Turbine Yacht

To The Editor of THE SHIPPING WORLD

SIR—In reading your interesting article on page 129 of THE SHIPPING WORLD of August 16 under the above heading, I notice you infer that this yacht is the fastest vessel built with the exception of naval craft and you also infer that hydrofoil craft may be in the same category but faster.

I do not think I would be wrong in saying that few, if any, hydrofoil craft reach 40 knots and probably the figure with any sort of payload is more like 35 knots.

As is well known, a great many of this type of craft just about top the 40-knots mark, but the difficulty and general development effort required to reach or exceed 50 knots is an altogether different problem.

Yours etc,
PETER DU CANE,
Managing Director,
Vosper Ltd

Portsmouth
1 September 1961

A striking view of the new French liner "France" in dry dock for the fitting of her four propellers. The "France" is due to start her maiden voyage on February 3 next, preceded by an inaugural cruise to the Canary Islands

ON THE "BALTIC"

THE FUTURE AS UNPREDICTABLE AS EVER

By BALTRADER

In a world where subsidised, protected or State-controlled shipping becomes more common every year, it is remarkable that British shipowners, who are totally unprotected from the cold winds of competition, remain as vigorous as they are. This is especially so in the case of tramp shipowners who, unlike liner operators, do not run on regular routes and cannot therefore count on the continued support of shippers who may have used their services for several decades. Nevertheless, our heavily taxed tramp fleets retain a diminishing proportion of the world's total tonnage, and it is certainly an act of faith for a British owner to build a large contemporary tramp ship today. It takes courage to invest a million pounds or more in a newbuilding when it is remembered that few British tramp ships of this valuation can have covered their annual depreciation, let alone made a profit, in the past four years. It is true that in recent months rates have reached worthwhile levels again, but although most owners are natural optimists, and there is a general expectation that conditions on the freight markets will steadily improve for some years to come, it can only be intelligent guesswork, and the future for British tramp ships remains as unpredictable as ever.

Value of Tramps in Increasing World Trade

There is, of course, comfort to be derived from the fact that the world's population is steadily rising and with it the volume of trade between nations and the consequent demand for shipping space. To a large extent, however, this is no doubt being met by the steady increase in the nationally controlled shipping fleets already referred to, especially within the Communist bloc of countries, and for that matter, by the expansion of free enterprise liner companies such as our own. Nevertheless, there must surely always be room for tramp tonnage, for what country in the world, however nationalistically minded it may be, can economically handle with its own ships all its imports and exports, whose volume rises and falls from month to month and from year to year. A country must either have too few ships to handle all its trade, in which case it must call in outside tonnage from time to time, or it must have sufficient shipping available to be able to lift all its imports and exports at their peak of activity, which must mean an uneconomic surplus of tonnage whenever the country's trade falls below the peak. Britain and a number of other old-established maritime countries have long provided a free enterprise tramp shipping service which can be called into action by any charterer anywhere in the world, rather as one hails a taxi, and the great advantage to the charterers, as also to the taxi user, is that he is in no way responsible for the maintenance of that service, which can be used or ignored at will. It does, of course, cost money to use the tramp shipping service, especially when tonnage is in short supply, but a charterer gains on the roundabouts what he loses on the swings, for tramp freights often fall far below economic operating levels, as owners have found to their cost on many occasions in recent years.

A prominent British shipowner recently referred to the fact that his company was considering the possibility of diversifying, presumably outside shipping interests, but for many years now a number of well-known British tramp firms have diversified within the shipping industry. In other words, they have developed mixed fleets with, for example, a number of tankers in addition to dry-cargo tramp ships, and this has helped them to tide over the inevitable bad patches on the freight markets, especially as in most cases the tankers have been on long period charters to the major oil companies and have not therefore been subject to the ups and downs of the open markets. A number of these British owners were also able to give their fleets better balance by building and chartering ore carriers in conjunction with the British Iron & Steel Corporation, and these arrangements, concluded several years ago at satisfactory rates, must have provided the owners concerned with some useful income over the past three or four years, when the open freight market has often been at a very low ebb.

The Freight Markets

Firm conditions rule in the Atlantic area; late last week about half a dozen tankers were taken for bulk grain from the U.S. Gulf to Antwerp, Rotterdam or Amsterdam at the improved rates of $5.15 for 17,000 to 18,000 tonners and $5 for tonnage exceeding 20,000 tons. These rates compare with about $3.50 accepted earlier in the year. Other fixtures include: *Irish Alder*, 9,000 tons, U.S. North of Hatteras to picked ports United Kingdom, 52s heavy grain, September 29/October 10; *Finnamore Valley*, 14,000 tons, U.S. Gulf to Antwerp-Hamburg range, $7.25, September 15/30; *Point Lacre* (tanker), 17,000 tons, heavy grain, $6.75, October; *World Felicia*, 12,500 tons, British Columbia or U.S. North Pacific to Japan, $7.25 wheat, October 15/November 5; Livanos vessel, 13,500 tons, British Columbia or U.S. North Pacific to Japan, $7.50 wheat, November 15/December 5; *Rookley*, 9,500 tons, one or two ports South Australia to U.K., 87s 6d bulk wheat ex silo, option London 85s, option Antwerp-Hamburg range 82s 6d, option bulk wheat ex bags 15s extra, September 25/October 25; vessel, 11,000 tons, Newcastle, N.S.W., to Hirohata or Kamaishi, 41s 6d f.i.o. coal, 2,500 tons daily load, 5,000 tons daily discharge, November 1/30. Vessel, 10,000 tons, Mormugao to Moji-Chiba range, 48s f.i.o., iron ore, 1,000 tons load, 1,500 tons discharge, 4¼ per cent, September 11/25; *Calliope*, 10,830/11,970 tons, Port Louis to London, Liverpool or Greenock, 67s 6d with options, September 23/October 10; vessel, 9,500 tons, Christmas Island to South Australia, 32s 6d, bulk phosphate, with options, October 24/November 20.

Time charters include; *Polyxene C*, 14,088 dwt, 13½ knots on 16½ tons fuel oil plus 1 ton diesel oil, 22s 6d per month plus £1,000 ballast bonus, delivery and redelivery Japan, 5/7 months, September 15/30; *Nicolaos S. Embiricos*, 10,883 dwt, 615,000 cu ft bale, 14/14½ knots on 15/16 tons intermediate fuel oil, $2.80 per month a trip, delivery British Columbia, redelivery U.S. North of Hatteras, October 5/15.

A $21 mn bridge across the main channel of the Port of Los Angeles now under construction is due for completion by late 1963. The high-span traffic bridge will connect two important areas of the harbour and City of Los Angeles—San Pedro and Terminal Island. It will tie into the important Harbour Freeway, for speedier transportation of overseas shipments landed at Terminal Island wharves for the Southern California market. Four lanes of road traffic will travel over about 2,000ft of main channel, one mile north of the present ferry service, which will be discontinued.

NEWS FROM OVERSEAS

From THE SHIPPING WORLD'S Own Correspondents

Japanese Conference Changes

THE Japan-Philippines Freight Conference, the Japan-Saigon Freight Conference and the Far East-River Plate Brazil Conference have issued notices to shippers that a general increase of 10 per cent in their rates, with some exceptions, will be imposed from November 1. The exceptions differ in each case but those of both the first two named conferences include heavy-lift and long-length charges. A conference survey showed that cargo movements from Japan to the Philippines in the first six months of 1961 totalled 256,683 tons, an increase of 31,313 tons on the same period in 1960. The monthly totals ranged from the minimum of 20,281 tons in January to the maximum of 58,295 tons in May. In the whole of 1960, the total was 479,781 tons.

The Marchessini Lines' representative in Japan has announced that the Hong Kong & Eastern Shipping Co Ltd will replace the Daido Line as Marchessini agents in Japan early in October. Rumours that Marchessini Lines might leave the Japan-Atlantic and Gulf Freight Conference were denied, and it was confirmed that in future Marchessini's "B Line" would terminate at Bombay. It also was stated that the *North Viscountess* would be the last Marchessini vessel calling at Japanese ports to be assigned to the Japan-Pacific Coast of North America service.

The Japan-Atlantic and Gulf Freight Conference and the Trans-Pacific Freight Conference of Japan announced on August 16 that an increase in their rates, "generally of 10 per cent," from Japan, Korea and Okinawa to all destinations would become effective on November 1. This followed earlier notices by other major conferences covering Far Eastern routes that they would impose similar increases. It also gave the same reasons as the earlier notices for the increase—a steep rise in operation costs, especially in crews' wages and stevedoring charges and "those other items of expense which are largely influenced by labour costs."

The increases, together with indications of increased government aid, have improved the outlook of Japanese shipping companies, and this is reflected on the Tokyo Stock Exchange, where sudden interest has developed in shipping shares, for many years among the lowest on the investment list. A conference survey showed that in 1960 cargo movements in conference vessels to the Far East from the Atlantic Coast of North America totalled 2,481,014 tons in 490 sailings, and from the Gulf of Mexico 1,906,668 tons in 329 sailings. Included were 1,806,924 tons from the Atlantic Coast to Japan in 367 sailings, and 1,308,909 tons in 281 sailings from the Gulf to Japan. Of these movements to Japan, general cargo comprised 463,857 tons and 288,619 tons, respectively.

Indian Shipping Merger

THE Western Shipping Corporation Ltd, of Bombay, is merging with the Eastern Shipping Corporation Ltd, of Calcutta. As from October 2 these two will jointly be known as The Shipping Corporation of India Ltd, which will be a Government of India undertaking. The newly-formed Corporation has been admitted as a member of the various conferences serving India-Pakistan-United Kingdom-Continent, and will maintain regular sailings. The service was formally inaugurated on August 9 at Calcutta by the Indian Minister of Transport and Communications, and the first sailing took place when the *Vishva Kirti* left Calcutta on August 15 for ports in the U.K. and the Continent. Mr A. S. Neb has been appointed conference delegate and representative in the U.K. and Eire for the new Corporation, whose London agents are Stelp & Leighton Ltd. The Liverpool agents will be Henry Tyrer & Co Ltd.

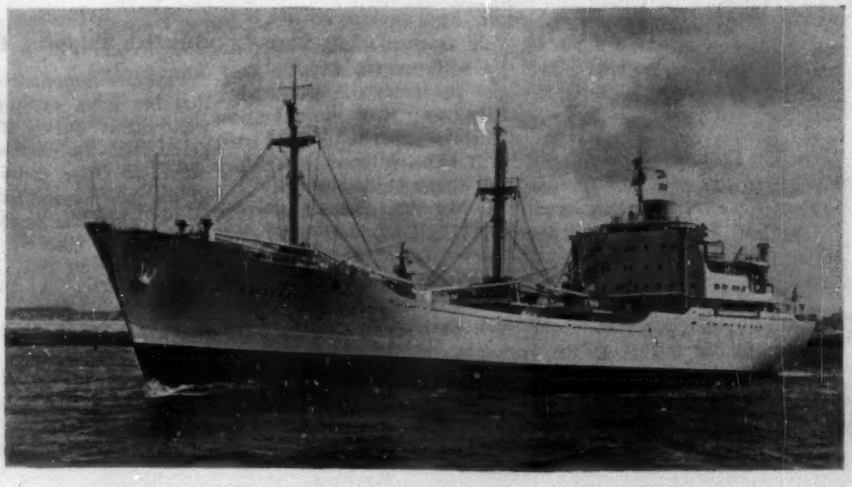
On August 24 India's Minister of Finance, Mr Morarji Desai, formally hoisted the Indian flag on board the 33,000-dwt tanker *Adi Jayanti*, docked at Butcher Island, Bombay's main oil terminal station, four miles east of the harbour, to indicate her acquisition from Norway and her taking over by the newly established Jayanti Shipping Co (Private) Ltd. In a message sent on the occasion, Prime Minister Pandit Nehru welcomed, as a significant event, this acquisition of the largest ship so far acquired by the Indian Merchant Navy, which will save £18,000 annually in foreign exchange each year.

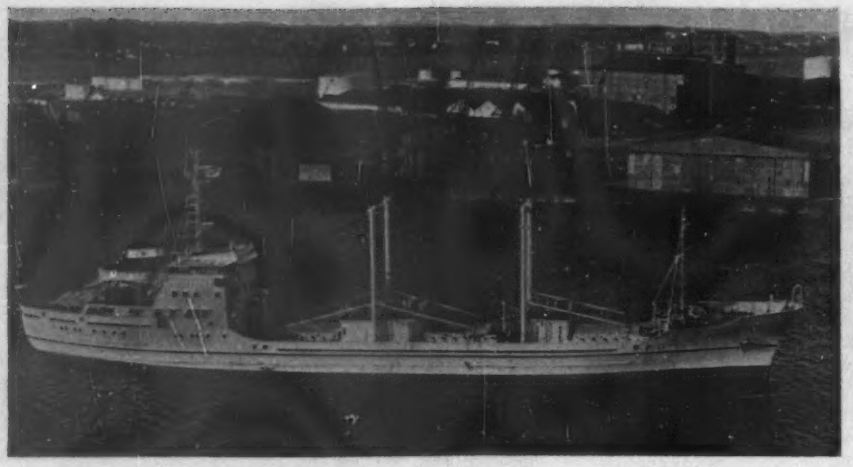
Ceylon Shipping Corporation Bill

DRAFT legislation to set up a National Shipping Corporation in Ceylon to acquire and manage a fleet of cargo vessels will be placed shortly before the Government by the Minister of Shipping, Mr T. B. Illangaratne. The proposed corporation will primarily handle all imports and exports made by the Government, which is getting more and more into the import and export trade. As an initial step the Corporation will act as charter

NETHERLANDS-BUILT FOR SWEDEN

The Swedish East Asia Company, Gothenburg, has taken delivery of the 10,800-dwt cargo liner "Nagasaki" from the Nederlansche Dok en Scheepsbouw Mij, Amsterdam. She is the first in a series of four vessels ordered at the yard for these owners, and is of a new type built as a closed shelterdecker with the propelling machinery aft of amidships. The cargo hold capacity is about 645,000 cu ft bale which includes about 43,000 cu ft in refrigerated holds. The propelling machinery consists of an eight cylinder Gotaverken diesel engine, built under licence by the shipbuilders, developing 10,000 bhp. The contract speed is 17.5 knots





FOR ST LAWRENCE TRADE

The new Dutch refrigerated motorship "Echo" seen at Dublin while on her maiden voyage. She is owned by Hudig & Veber (N.V. Zeevaart Mij.) and was built by the N.V. Scheepswerft "De Hoop", Lobith. She has been fitted for trading to the Great Lakes via the St Lawrence Seaway. The cargo handling equipment comprises six 3-tons derricks serving three holds with a combined capacity of 74,000 cu ft. The holds can be kept down to —32 deg C

brokers or agents and obtain charters for the Government either on a voyage or contract basis. It will charge the Government a brokerage or agency commission for such work. The Polish Government has offered long-term credit for the purchase of Polish ships. The Corporation will also handle the coastal cargo round Ceylon.

Shiprepairs in Colombo

MASTERS of ships calling at Colombo and shipping firms have complained about the lack of proper facilities for shiprepairs, the insufficiency of dry docks and the rising cost of repairs. Mr M. L. Caspersz, Principal Collector of Customs, in his capacity as Superintendent of Merchant Shipping, says that the shiprepairing industry is of great importance from the point of view of foreign exchange. He states that the rising cost of shiprepairs has led to a diversion of repair work to foreign ports and the purchase of small tugs, launches and lighters from abroad. Suggesting that the Government should accept responsibility to provide for the requirements of this industry, Mr Caspersz says: "The provision of facilities for shiprepair work and the building of small craft is as much part of the legitimate functions of the port authorities as the provision of cargo berths, cranes, water, bunkering and dredging." Well organised workshops on the waterfront, preferably near the docks, additional dry docks and suitable repair berths are some of the urgent requirements mentioned by Mr Caspersz.

American Shipping Notes

THE U.S. Department of State has announced the appointment of Mr William G. Vale as chief of its Shipping Division, a post in which he will oversee national policies governing maritime affairs in matters affecting foreign relations. The new official has an extensive background in private shipping, having held posts in the United States Lines Company from 1935 to 1950, with an interval of wartime service for the War Shipping Administration. Since 1950 he has been U.S. Maritime Attache in Oslo and Rome, and most recently U.S. Despatch Agent (the Government's foreign freight forwarder) at New York. His new appointment has been applauded by Mr Ralph E. Casey, president of the American Merchant Marine Institute, who said, "It is not often that public appointments fit the talents of the appointee so exactly to the requirements of the job."

Avondale Shipyards Inc, of New Orleans, are the apparent low bidders on construction of four new cargo liners for Lykes Bros. Steamship Company and two for the Gulf & South American Steamship Company. The Federal Maritime Administration announced on August 25 that, in competition with six other yards, Avondale offered to build the six vessels, all of similar design, for $48,648,000. Broken down by units, the bid was $8,062,000 for each Lykes vessel and $8,200,000 for each of the Gulf & South American ships.

The Government has approved the application of the Bull Line to acquire two C4-type cargo vessels from the Reserve Fleet in exchange for two of its present Liberty ships, for the difference in value, less reactivation costs, under terms of the Vessel Exchange Act. The Liberty ships to be traded are the *Carolyn* and *Angelina*; the C4s, the *Marine Panther* and *Marine Fox*. Bull plans to spend $5 mn to convert these to combination break-bulk and container ships for its service to Puerto Rico. A last-minute effort by Bull's competitor, See-Land Service, to acquire the C4s through its subsidiary Sword Line was rejected by the Government.

Late in August the Quincy, Mass., yard of the Bethlehem Steel Company placed a tapered 45-tons funnel in position on what will be the largest U.S.-flag cargo ship and the world's second largest tanker, now being completed for the Niarchos-owned Manhattan Tankers Company. As yet unnamed, this 940-ft vessel of 106,500 dwt will have a speed of 17½ knots on her entry into service in 1962.

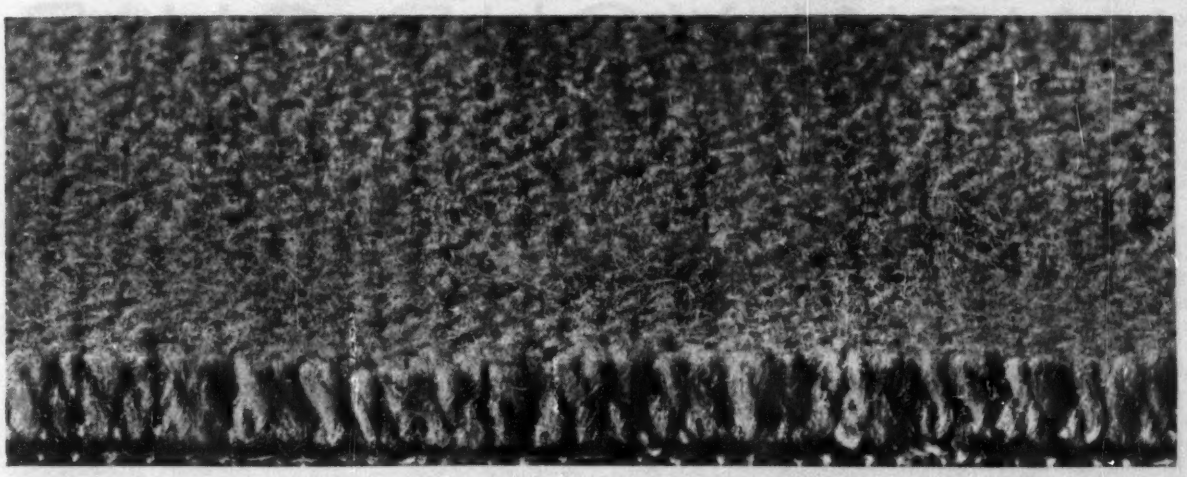
The largest graving dock on the Great Lakes, 831ft long and 95ft wide, was placed in service by the Fraser-Nelson Shipbuilding & Dry Dock Company at Superior, Wisconsin, on August 3.

Swedish Shipping Earnings Improving

FIGURES compiled by the Swedish Board of Trade show that the gross earnings of Swedish shipping were somewhat higher during the first quarter of the year as compared with the corresponding period in 1960. Costs have decreased. The gross earnings during the first quarter of the year amounted to Kr571 mn as against Kr531 mn in 1961, and the costs to Kr248 mn as against Kr265 mn. The surplus rose by Kr57 mn to Kr323 mn during the first quarter of 1961.

	Earnings (mn kr) 1960	Costs (mn kr) 1960	Surplus (mn kr) 1960
1st quarter	531	265	266
2nd quarter	555	254	301
3rd quarter	597	277	320
4th quarter	624	291	333
Total	2,307	1,087	1,220
	1961	1961	1961
1st quarter	571	248	323

2,500,000 FEET



WALKED OVER THIS CARPET

and there's still years of life left

NOW—PERFORMANCE FIBRE FOR CARPETS

With the co-operation of the organisers of the Ideal Homes Exhibition, standard contract quality 100% Acrilan 15 pile carpet made by James Templeton & Company was laid in the main gangway of the Empire Hall, Olympia. For over a month from ten in the morning till ten at night over 1¼ million people walked over this carpet subjecting it to one of the most rigorous tests ever devised.

At the end of the Exhibition, this standard Templeton carpet was taken up and cleaned by conventional methods by the Patent Steam Carpet Beating Company. The difference between the carpet before the test and afterwards was very slight considering the amount of wear to which it was subjected. Here is powerful proof that, even under the most rigorous conditions, carpet made with Acrilan 15 fibre not only wears extremely well, but proves quick and easy to clean and closely retains its original appearance.

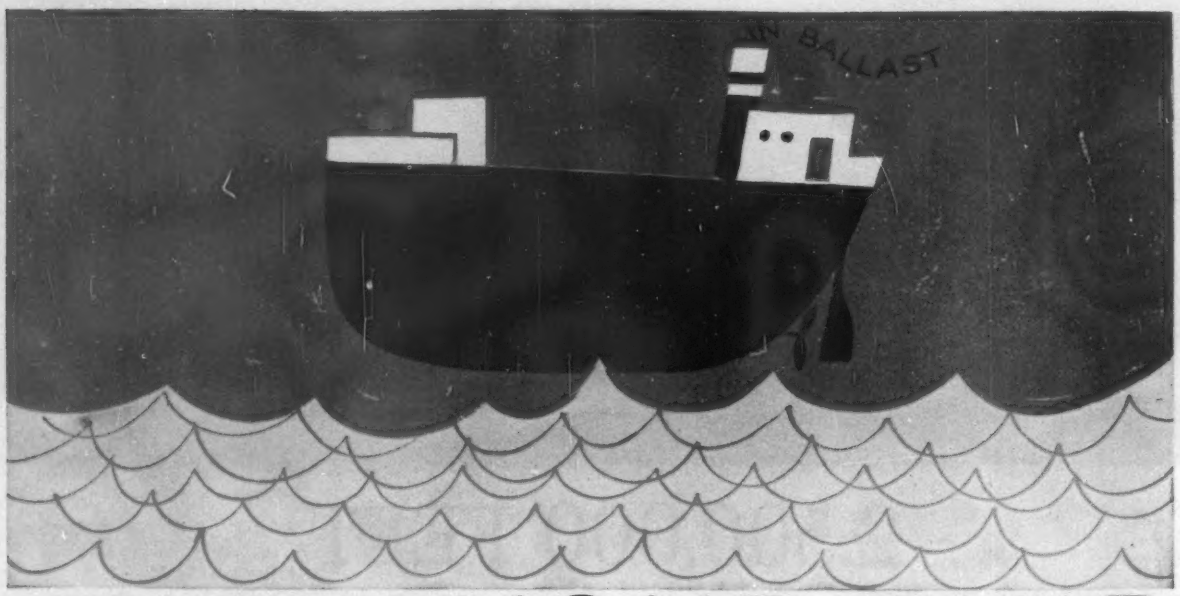
Brochures showing samples of the carpet used in this test are available from Chemstrand Ltd., 8, Waterloo Place, London, S.W.1.

ACRILAN is the registered trademark for the acrylic fibre supplied by CHEMSTRAND LIMITED. CHEMSTRAND make only the fibre—Britain's finest Carpet Manufacturers do the rest.

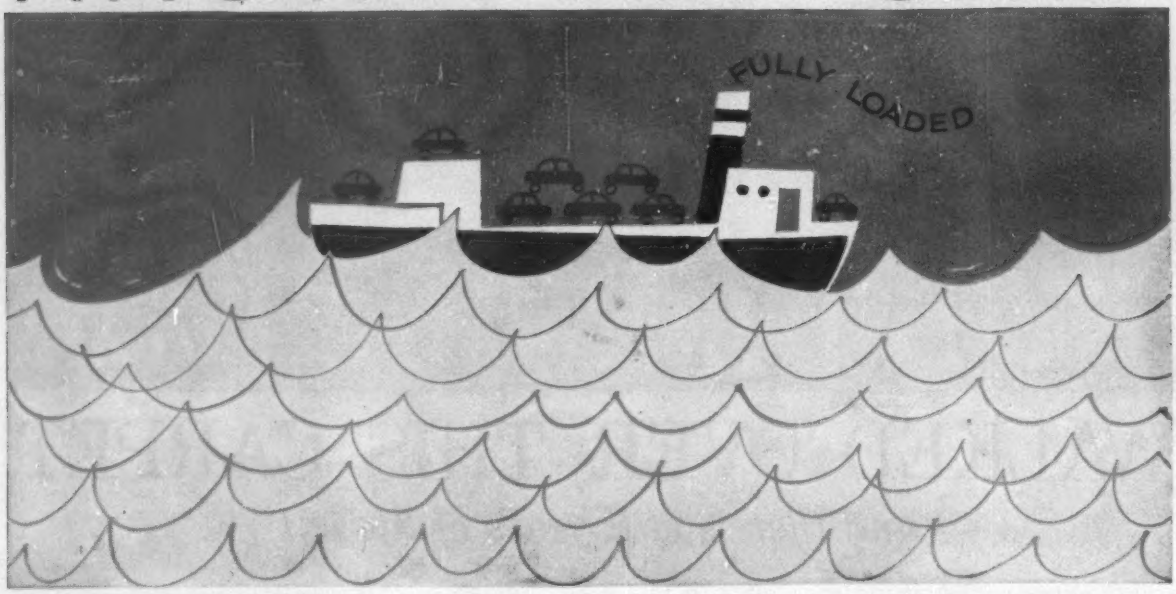
March 3rd, 1961. Acrilan 15 carpet in the Empire Hall ready to be walked over by 2,500,000 feet.

ACRILAN 15

C



KNOW YOUR SHIP



Is there a load on your mind when she's flying light? Are you any happier when she's down to her marks? Can you predict how your ship will respond? No! Then help is at hand. Accurate basic information first obtained when acceptance trials are carried out with the Decca Navigator may be correlated with that subsequently obtained by in-service trials, since Decca is continuously available to provide the comparison. In this way the performance of your ship under varying conditions of load can be computed and tabled. And solid facts, ready to hand, on such matters as response to helm, stopping distances, turning circles and constant speeds are just what ships' officers require to do their jobs with greater confidence. As facts come to light and problems dissolve you will indeed *know* your ship — with the Decca System for speed and manoeuvring trials.

THE DECCA NAVIGATOR COMPANY LIMITED LONDON

THE DECCA NAVIGATOR

Some Aspects of Automation in Ships—I*

ECONOMIC GROUNDS FOR AUTOMATION ON BOARD

By G. Kaudern

AUTOMATION is a very extensive concept. Today, when we speak of automatic control equipment, we generally think of the far-reaching automation found, for example, in mechanised processes in industries, nuclear power plant, satellites etc. In shipbuilding we have not yet reached this stage and in our trade the word automation is extended to apply to all sorts of automatic control, remote control etc.

Defined in this way, automation is by no means new within shipbuilding. Automatic speed control, temperature control, level control etc, have existed for decades in power-driven vessels. However, during the last decade technical development has proceeded extremely fast and automatic control and steering are in use in various fields to an extent that could hardly be foreseen a decade ago. This development has been hastened by such ingenious means as data processing equipment, new measuring instruments, recording instruments, while new materials and more efficient control methods for industrial manufacture have been brought into use simultaneously.

The prerequisites for an introduction of automation can be said to be of two sorts, technical and economic. The technical ability must exist if we are to be able to introduce automation at all. The economic conditions must also exist if automation is to show a profit. These technical and economic prerequisites interact at many points.

There is no doubt that the technical prerequisites for automation on an extensive scale already exist. The relevant technique has been developed to such an extent that very complicated processes can be guided and controlled by machines, although it follows that the more complicated the process, the more expensive will be the automation. *On economic grounds,* the following considerations can justify the introduction of automation on board a vessel, viz.:—

Greater economy of operation.

Reduction of crew.

Greater Economy of Operation

Automatic regulation of machinery can, as a rule, be made more accurate, efficient, and continuous than manual regulation, and can thus reduce both fuel consumption and maintenance requirements. It follows that an investment in automatic devices can be profitable even if it entails an immediate outlay and even if no reduction can be made in the personnel. A convenient example of this is the refrigerating machinery on board a fruit carrier. Only through automatic supervision is it possible to carry fruit economically, efficiently, and in the conditions which best suit this delicate cargo.

This is, however, only one side of the problem. Greater economy of operation can, in the end, be achieved only if the outlay in automation is less than the gains which may result from its use. We should, in order to come to an understanding of this, compare the operating conditions of the ship with those for other means of transport. Operations on board can be conveniently divided into the following categories:—

(A) The navigation of the vessel.
(B) Handling and maintenance of machinery and hull.
(C) Catering.
(D) The loading and unloading of cargo.

(A) The Navigation and Steering

The operating conditions for a ship at sea differ materially from other fields and it follows that automation will be more complicated and expensive than with other means of transport. The ocean-going ship, furthermore, travels fairly slowly over large distances and, at times, cannot be reached with the available electronic instruments, although this disadvantage will probably be overcome in the future. Further, the ocean-going vessel is occasionally completely isolated for periods of up to 20-30 days. Much can occur during this time and it seems unthinkable to automate completely the navigation of the vessel as long as storms etc exist. Manual intervention will occasionally be necessary and personnel must be at hand for this purpose. Navigation in the vicinity of coastlines, in harbours, and fairways, is also of such a character that its automation seems hardly possible at present. One of the prerequisites would be that every vessel would have to be equipped with the necessary device for remote control.

(B) Handling and Maintenance of Machinery and Hull

The operation of the ship's machinery is, of course, largely similar to operations in other fields which have been highly automated, but the differences are also considerable. The operations ashore that have been successfully automated have usually been characterised by a cyclic regularity which is easy to define and arrange. They may involve an acceleration to a certain velocity, a certain running time followed by retardation. They may involve a manufacturing process in a complicated tool, a packing process or possibly even a whole series of operations which result in a finished product.

The operation of ship's machinery, as is the case with the navigation of the vessel, does not involve the same undisturbed regularity. External impulses may force unforeseeable changes in the operations. These may arise from collision risks, unexpected heavy weather, or even simply a change of sailing orders.

As an ocean-going ship will be isolated during long periods when she cannot obtain external help from workshop or specialist, nor obtain spare parts from the shore, operating reliability is of great importance. A breakdown at sea will also have much more serious consequences than a stoppage in a factory, or the breakdown of a transport vehicle on land. For example, a ship often carries a perishable cargo, the satisfactory carrying of which is dependent on the fact that breakdowns do not occur.

The economy of the ship, and of its owner, are all dependent on the undisturbed operation of the vessel's machinery and on the fact that the vessel is at sea for as many days as possible while her time in port is reduced to a minimum. On board a ship when under way, as differentiated from an aeroplane, it is possible to carry out the supervision and repairs which contribute to reliability, reduce time in port, and prolong the life of the machinery. Such work can, of course, be carried out by a shore staff, but before this system is adopted, an economic analysis should be carried out in order to find out which system is the more economical. The following factors should be considered, among others, in such an analysis, viz.:—

(i) The first cost of the vessel.
(ii) The length of the route.
(iii) The profitability of the trade.
(iv) The possibility of regular maintenance in the ports visited.
(v) The normal unloading and loading time as compared with the time necessary for repairs.

---

* Abstracts of a paper read at the meeting of The Royal Institution of Naval Architects in Gothenburg on Thursday, 7 September 1961. Mr. G. Kaudern is manager of design at Kockums Mekaniska Verkstads A/B.

(vi) The relative wages of crew and shipyard workers in repair yards concerned and the owner's overheads per crew member.

These factors influence each other to such an extent that it is difficult to obtain a simple answer.

(i) Building costs will, of course, be reduced if the number of crew is reduced. The cost of accommodation etc, in Swedish-built ships can be estimated at about £1,000 per head. The boundary between what can be done by the crew or by the shore staff is not, of course, clearly defined, but varies so that it is possible to arrive at an economic optimum. It cannot be taken for granted that the transfer of a function from crew to shore staff will be advantageous. The capital cost of the ship may be reduced, but in the end the costs of shore staff also have to be borne by the owner. A crew on board is always at hand and their time can often be better utilised than that of a shore staff.

(ii) Reliability over longer periods must be ensured from vessels on trans-ocean routes than from vessels on short routes. A cross-channel ferry can, for instance, be inspected daily, if necessary. It is of great importance that we should attempt to estimate the value of the ability for continuous operation and it would seem that much remains to be done in this field.

Long continuous service between inspections probably requires quality, money and weight. The following table illustrates this view but should be taken as only indicative.

	Time between overhauls hours	Life hours	Weight/ Power kg/hp
Automobile motor ...	1,500	5,000	2
Aircraft:			
Jet engine ... ... }	1,800	50,000	0.5–1.5
Piston engine ... ... }			
Ship's motor	6,000	100,000	45
Steam generating plant ...	8,000	200,000	75

It is difficult to define the concept of "quality" in simple terms. In this connection reference may be made to nuclear installations. The components in such plant are subjected to an extremely severe and expensive inspection due in no small measure to the desire for reliability. Widespread use is also made of high quality materials in the construction of the plant in order to resist corrosion, and this is a necessity here.

Investigations of the need for quality have also been made for a long time by navies and larger shipowners. Does it, for instance, pay to use a high quality but expensive material for piping or fittings, if this can result in a reduction of stoppages and maintenance costs? No definite answer to this and similar questions is yet available, and opinions differ widely, but it should be possible, using modern techniques, to reach a better understanding of the subject.

The problem, therefore, consists not only of how automation is to be carried out but also of how a corresponding increase in reliability is to be obtained. This, too, is obviously a question of cost. If we plot a curve with the period between overhauls as ordinates and the corresponding cost of abscissae, it is likely that we shall obtain an exponential curve with an asymptote at the period for which the cost is infinitely high. It is difficult to say whether this period will be two or ten years for ships' machinery, but the author has a feeling that even a period of two years, without any attention whatsoever, would require an unexampled quality and a correspondingly high first cost.

These problems can be circumvented, to a certain extent, by employing reserve installations which are automatically brought into use if the primary plant should fail. This principle is already widely employed. It will, however, cost both money and weight when fully extended and it is, for this reason, hardly possible to go as far as on land. Weight is of no great importance in shore installations, but at sea it reduces the payload.

(iii) The greater the profit to be made on a voyage, so much the more expensive is any interruption of the service. It may, therefore, be profitable, in certain circumstances, to pay for high quality and a skilled crew with spare parts available on board, in order to keep the vessel in service with port time reduced to the minimum necessary for loading or discharging cargo.

(iv) If a certain amount of repair work and inspection is to be carried out by shore staff, suitable facilities must exist at the ports which are regularly visited. Should these be lacking, the owner will have to supply them. The cost of maintaining personnel at some distant port may exceed the cost of the corresponding crew on board. It is probably easier for owners with regular lines to justify such service installations than for owners of tramps or tankers with their short harbour times.

(v) If a vessel such as an ore carrier regularly calls at ports with efficient loading and discharging equipment which permit a very quick turnround, it is probable that the maintenance work cannot be carried out within this time even if the necessary personnel and equipment are available. This consideration may lend additional support to the case for a skilled crew which can work at sea.

(vi) Obviously, wages and overheads per crew member are also factors which influence a decision. The more expensive each crew member, the more it lies in the owner's interests to reduce their number. This view has naturally been strongly forwarded by American opinion. It should not be forgotten, however, that even shipyard workers are highly paid in America.

(C) Catering

Catering can of course be quite easily automated, or at least rationalised and simplified. Airlines are a good example of this. Central kitchens on land which deliver cooked, packed and ready-to-serve meals are thus no utopia. The introduction of the cafeteria bar and automatic vending machines on board ship are steps in the right direction.

(D) Loading and Discharging

Loading and discharging have, lately, drawn a deserved share of attention. A considerable part of the ocean-going vessel's costs fall into this category. It is not unusual for cargo liners voyaging between North America and Europe to spend up to 50 per cent of their time in port.

A rationalisation of loading and unloading gear should, therefore, give the owners an immediate possibility of larger gains than many other more difficult and complicated forms of rationalising. A short harbour time would, however, reduce the chances for repair by shore staff and would thus indirectly reduce the chances to reduce the crew.

To summarise, it can be said that while the technique necessary for extensive automation exists today, the special conditions under which a ship operates make it more difficult and expensive to apply in practice on a ship than in other spheres. The most important reasons for this are:—

The ship operates completely isolated for long periods.

The ship is a large and expensive unit. Its operation is a complicated process which is difficult to foresee and programme.

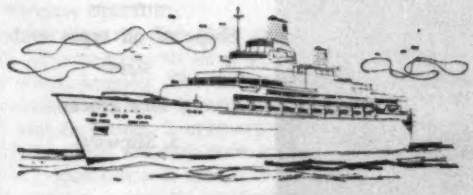
An interruption of operations can often completely upset all economic calculations. There must, therefore, be either crew on board to repair the failure or components of such high quality that failure will not occur.

Time spent in port is decisive for economy. It may, therefore, be worth while to make investments which can limit idle time to that necessary for loading or discharging. Because of the long periods spent at sea it is necessary to

SEMTEX STUDDED RUBBER TILES ON THE VERANDAH—

—part of the 322,000 sq. ft. installation which includes weather decking, underlayments and decorative surfacings.

Semtex offer *now* a practical, decorative range of flooring, decking and proofing materials.



* Wide selection of materials which not only resist corrosion but also provide hard-wearing, hygienic, slip-resistant floors for cabins, lounges and decks.
* Constant research into the special problems of deck covering and floorings for shipbuilding.
* Design consultancy service.
* Fully comprehensive decking, laying and maintenance service available in every leading maritime country.

For further details please contact Semtex direct:

INTERNATIONAL FLOORING AND DECKING CONSULTANTS

Semtex Ltd

16 SEMTEX HOUSE · 19/20 BERNERS STREET · LONDON · W.1 · TEL: LANgham 0401

CH/61/555/M1

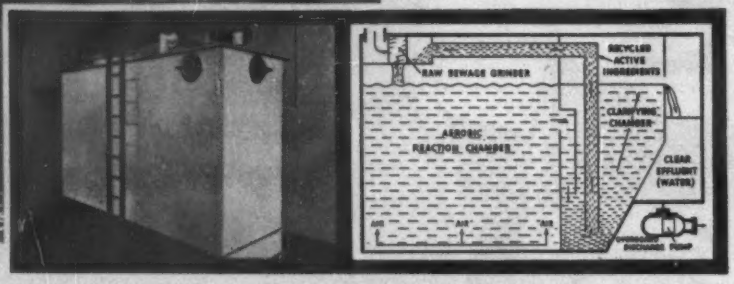
AN OPEN LETTER TO SHIPOWNERS EVERYWHERE!

Dear Sirs,

The danger notice seen above could, quite reasonably, be erected in almost every port, river or waterway in which your ships operate. It prompts us to ask this pertinent question: what are YOU doing personally, to prevent this pollution of vital water? Merely to agree that something *ought* to be done is not enough. Direct action, and *prompt* action, should be taken in your own interests as well as the interests of fellow creatures.

With pride and complete confidence may we suggest your immediate consideration of fitting G. D. Peters "BIOGEST" complete Marine Sewage Purification and Disposal Equipment. This is the only practical answer to the Pollution problem.

Yours very faithfully,
G. D. PETERS & CO. LTD.



"BIOGEST" Marine Sewage Purification and Disposal Equipment is completely automatic, and requires no supervision. There is no residual sludge to be stored. ***95-98% PURIFICATION IS ACHIEVED IN ONE PASS.*** *It is considerably cheaper to instal "BIOGEST" during construction. "BIOGEST" is a wholly biological process, absolutely no chemicals are employed.*

G. D. PETERS & COMPANY LIMITED.

(A member of the G. D. Peters Group) **WINDSOR WORKS, SLOUGH, BUCKS · SLOUGH 23201**

ESTABLISHED 1870

JAMES LAMONT & CO. LTD.

SHIPBUILDERS, SHIP REPAIRERS and ENGINEERS

SHIPBUILDING

Ships of all types up to 350 ft.

3 Building Berths

Fitting-out Basin

T.S.M.V. "ROYAL DAFFODIL II" Dimensions 159' 6" × 46' × 13' 4"

SHIP REPAIRING

Ships of all types and sizes

2 Dry Docks

2 Slipways

Built to the order of THE COUNTY BOROUGH OF WALLASEY

GREENOCK & PORT GLASGOW

think of the comfort and well-being of the crew.

One of the most inviting goals for those who propound extensive automation is a reduction in the crew. The difficulty of obtaining qualified personnel, not least for Scandinavian ships, is a considerable incentive, quite apart from any direct economic gains. What then are the possibilities if automation and remote control are introduced to reduce the crew on board?

It has already been pointed out that maintenance service plays an important part. Both the crew on watch-keeping and those who are not, use working time to carry out repairs and maintenance. As a rule, this part of the time is not affected by automation. Not enough attention has been paid to this point of view and it can be illuminated only by statistics, based on careful time studies. It should be added that an increase in the amount of electrical and hydraulic apparatus on board will require more attention and maintenance by specialists who will in many cases have to be added to the normal crew.

It should also be investigated as to whether automation is really the best and easiest way of reducing staff. If a large portion of the time is spent in painting, inspection, changing gaskets, grinding-in valves etc, this time should firstly be reduced, for instance, by employing high quality fittings and all-welded piping instead. Another method of reducing maintenance crew could be by putting a highly skilled repair group on board for, say one month per year. Such a group would perhaps be best qualified to keep the vessel in good order, and would thus reduce the work and responsibility of the ordinary crew which could, therefore, be reduced in both quality and quantity.

The number of the crew is determined not only by the work they have to do but also by the current laws and regulations, and the customary interpretations of these and of employment contracts between shipowners and employees.

Laws are not the same in all countries. We would digress too much if we considered all of these, and for this reason only the conditions in Sweden will be mentioned. Swedish regulations correspond in principle with the international conventions. These are framed for conventional ships and do not take into consideration technical improvements which may be introduced and which ease life on board. The laws state that a vessel shall always be sufficiently manned and that, in principle, there shall always be one group at work and one group at rest, resulting in those who keep watch being divided into three watches.

The regulations about officers state that an ocean-going vessel must carry the following personnel:—

1 Master.
3 Mates.
1 Chief engineer.
3 Engineers.
1 Wireless operator.

The law thus requires three mates, but it has often been found advantageous to have a fourth mate who is freed from watch keeping. The law requires 6 deck crew, while the contract stipulates 9 men (5 A.Bs, including the boatswain and carpenter, 2 ordinary seamen and 2 boys).

At least six of the deck crew are watch-keepers (1 helmsman + 1 look-out = 2 men × 3 watches = 6 men). Automatic steering is usually employed in open waters so that the helmsman can, on the captain's responsibility, perform other tasks. There is often a third man on each watch for odd jobs. Thus, all nine of the deck crew become watch-keepers. It is interesting to note in this connection that Norway and Denmark require a twelve-man deck crew.

There are no definite requirements in either law or contract as regards the engineroom crew. The only requirement is that there is to be a sufficient crew. Laws state also that the engineroom crew shall be divided into three watches each of which is to contain the number of men necessary for the care of the machinery. This phrasing would seem to exclude the possibility of replacing the entire engineroom crew by automatic apparatus. In practice this means that one estimates the number necessary from vessels' deadweight size and from the engine power.

On a diesel-engined vessel there are, normally, one engineer officer and one motorman on each watch (total, six men). Thus, it is theoretically sufficient with three motormen, but in practice there are usually five more men. On a turbine vessel there must be one engineer officer, one man in the turbine room, and one man in the boiler room on each watch. In addition to the above-mentioned crew there are generally a turner and an electrician, and on tankers and bulk carriers a pumpman, thus making a total of 15 men. The above-mentioned figures are required on all vessels of over 6,750 tons deadweight, while some reduction is permitted in smaller vessels.

As an example we can consider a 19,000-tons dwt tanker which has a normal complement of 45 men. Within the frame of the law it is today theoretically possible to reduce this number to 26, although this is not true in practice. If each man costs the owner £1,250 per annum, an elimination of one man would pay the interest on an investment of about £12,500. An elimination of 19 men (45-26) would thus create a "gain" of about £250,000. An investment of £150,000 of this sum in automation would leave a saving of £100,000. The question then arises as to how much automation can be bought for £150,000 and how much quality or maintenance ashore can be purchased for this sum.

We have established that a certain reduction is theoretically possible in comparison with current practice. Such a reduction will, however, affect mainly the lower paid personnel who are free from keeping watch. There is, however, less freedom in practice than the letter of the law allows. Customs, based on interpretation of the law and agreements with trade unions which often have international scope, are factors which further limit the owner's freedom.

It is a matter of experience that, especially in shipping, it is a difficult and time-consuming process to bring about changes in the law and its applications. While this should not be permitted to affect efforts to improve and automate ships it is an undeniable hindrance to progress.

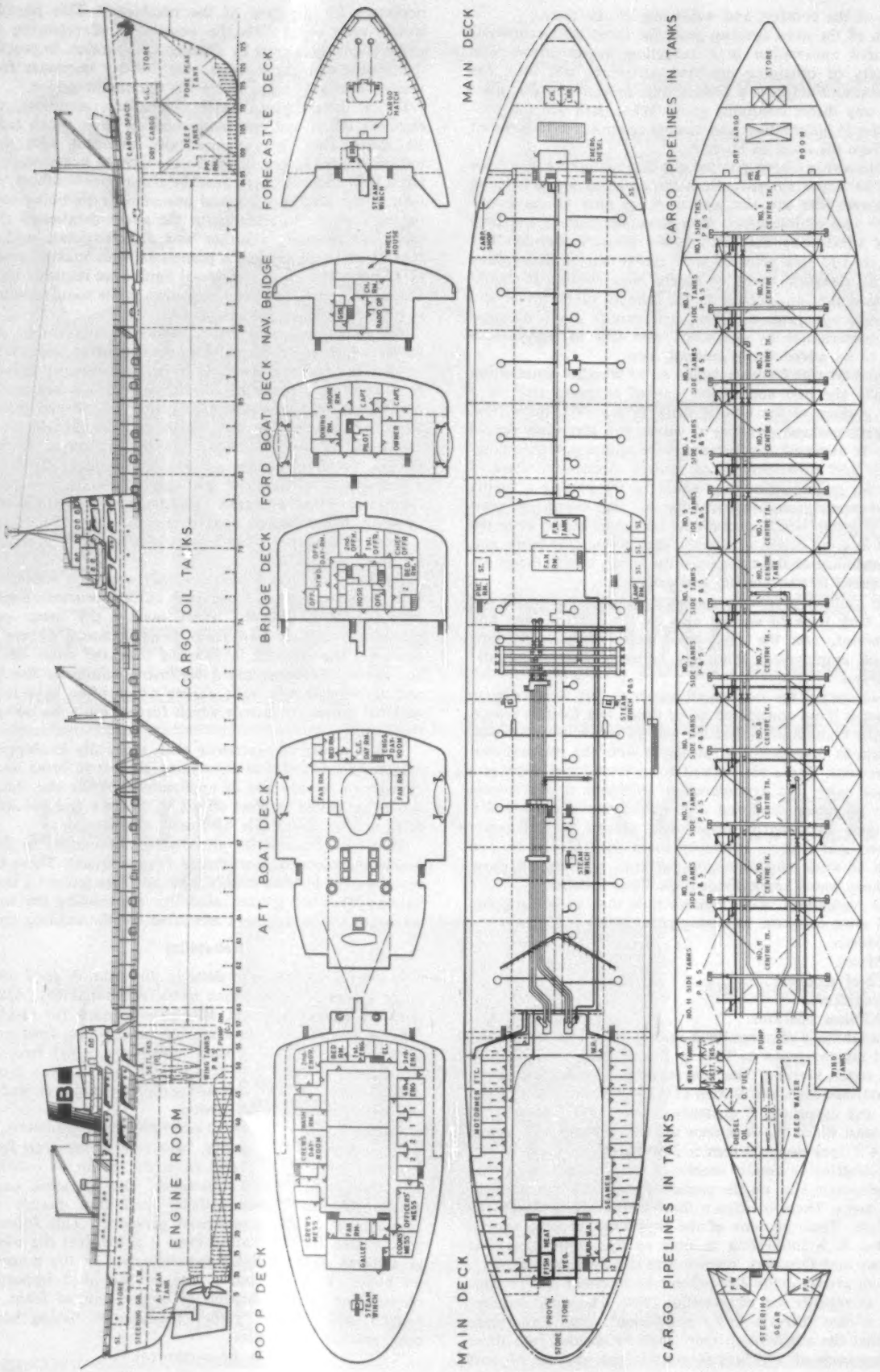
Two more reasons for introducing automation in ships beside the economic one should be mentioned. These two reasons have hitherto mainly justified these technical innovations. They are greater reliability and making the work on board easier and more attractive for the existing crew.

Reliability

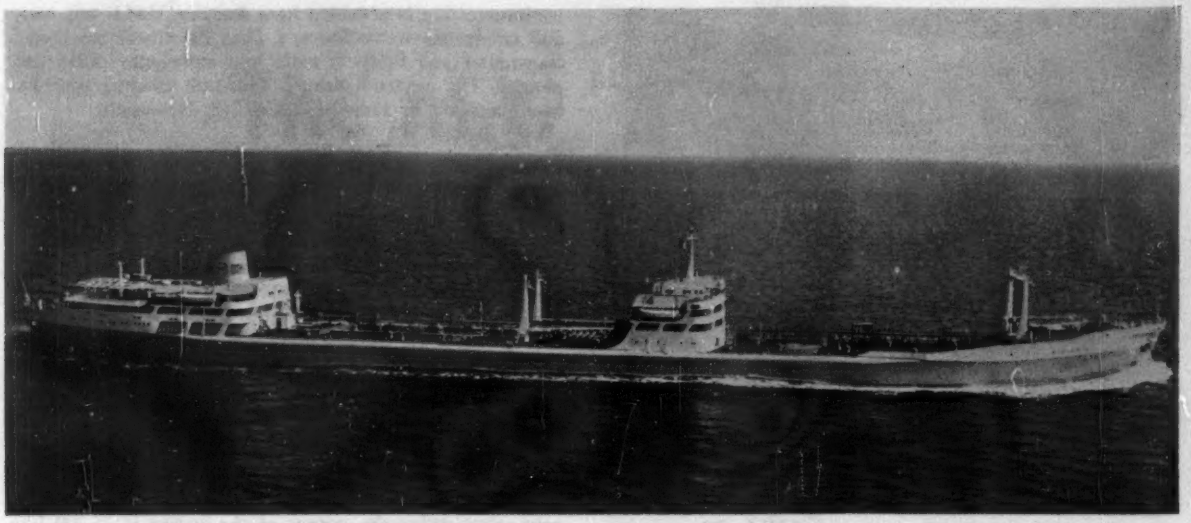
Much has already been done in this field. A good automatic supervision does much to increase reliability. Alarm apparatus, control panels, automatic devices for starting reserve installations, or even for making an emergency stop, are all examples of such supervision, which becomes more common every day. It is for this reason often profitable to install such devices although they may not lead to any corresponding direct saving.

Automatic devices such as controllers and regulators, as well as detectors and alarms, help to free the crew from repetitive routine tasks and from the strain of constant watchfulness. They can, therefore, also in some cases, reduce the crew's responsibility and thus permit the employment of less experienced personnel. This forms a good reason for automation even if it involves the owner in a direct outlay without any reduction in the numbers on board. It is, of course, one of the most important reasons for the introduction of engine control from the bridges, which is now rather common on fishing boats, tugs, coasters, and ferries.

(To be continued)



General arrangement of the oil tanker "Atalante", 41,400 dwt, built by Kockums Mekaniska Verkstads AB, Malmö, for Rederi A/S Athene v/Jörgen Bang, Kristiansand



Oil Tanker "Atalante"

NORWEGIAN VESSEL WITH LARGE KOCKUM-MAN ENGINE

THE TANKER *Atalante*, 41,400 dwt, built by Kockums Mekaniska Verkstads AB, Malmö, for the Norwegian shipowners Rederi A/S Athene v/Jörgen Bang, Kristiansand, has now been delivered. This vessel, powered by the largest Kockums-MAN engine yet built, is the eighth vessel of her class, but the first to be propelled by diesel machinery. Acceptance trials were successfully performed earlier this year, but the handing-over ceremony was deferred until this month, and the ship is now under charter to Esso. Apart from the fact that the new ship is powered by the first 12-cylinder Kockum diesel engine, she is of interest because of the manœuvring and control console which has been installed.

A further point of interest is the layout of the engine room, as will be seen from the accompanying drawing and illustrations. In a vessel with machinery aft there is very little space at floor level, so instead of grouping the auxiliary equipment round the control position at floor level in the usual way, this has been located on the lower platform where the control console is also situated. The ship is wider here, and there is more space for maintenance and attendance. The new layout also enables the lengths of piping and wiring used between the various auxiliary units to be reduced to a minimum. The main switchboard, for example, has been sited near the control console, and the two diesel-driven alternators are installed on the same platform level abaft the main engine, and away from the control position so as to reduce the noise level there.

Space Saved

By positioning the diesel alternators in this way, space round the main engine—which is so valuable for major overhauls—has been increased, and it is also possible to install the under-floor pipework far enough away from the main engine bedplate to give free access to the holding-down bolts.

It will also be noted that the two Scotch boilers are located forward of the main engine at upper platform level, above the cargo pump turbines, the turbo-alternator and their common vacuum condenser. This has allowed the major proportion of the steam and condensate systems to be concentrated forward in the engineroom.

With the larger tankers and diesel engines now on order at Kockums, rationalisation of the engine room is being given considerable thought. The present remote control system is only a stage is providing even more distant control of the main engines and even the auxiliaries. In the future the control consoles for both main and auxiliary machinery will probably be placed in sound-proof rooms away from the main engines and even on the bridge.

In the *Atalante* the two longitudinal bulkheads have been extended for a short distance into the engine room to provide extra stiffness. With tankers of greater deadweight and with the heavier 840-mm bore Kockums-MAN engines, it is proposed to bring the longitudinal bulkheads even further back, fit tanks at the sides up to the height of the lower platform and install the auxiliary equipment at lower and upper platform level, apart from a few pumps which will be installed in the space between the two bulkheads, adjacent to the main engine.

The principal particulars of the *Atalante* are as follows:—

Length o.a.	699ft 6in
Length b.p.	665ft
Breadth moulded	97ft ¼in
Depth moulded	49ft 3in
Draught	36ft 8¾in
Deadweight	41,400 dwt
Gross tonnage	25,586 tons
Net tonnage	15,521 tons
Machinery output	16,200 bhp
Contract speed (loaded)	17.38 knots
Cargo capacity	2,046,780 cu ft
Bunker capacity	2,934 tons
Pump capacity	4 × 1,250 tons

The *Atalante* is of all-welded construction with a rounded gunwale—a feature now becoming a little more popular with British shipbuilders as well. The cargo space is divided into 33 tanks, three abreast. All the tank bulkheads are of flat plate construction.

The main pump room, which is arranged adjacent to the engine room, contains four cargo pumps, three turbo-driven and one electrically-driven, each of 1,250 tons/hour capacity. The cargo pumps and steam turbines have been

The crew's day room

supplied by Jönköpings Mek. Verkstads AB, and the electric motor for the fourth pump by ASEA. The steam turbines are each of 650 hp and their speed is reduced from 5,600 to 1,700 rpm by Voith reduction gearing. The electric motor-driven pump is direct drive and is used for ballasting as well as cargo handling. The three stripping pumps, each of 150 tons/hour capacity, have been supplied by Thom, Lamont & Co Ltd.

In the forward pump room there is a 50-tons/hour ballast pump and a 75-tons/hour fuel transfer pump, both supplied by AB Gothia. In the forward pump room and forecastle space there is a four-cylinder diesel engine-driven emergency fire pump of 50 tons/hour capacity, operating on the Ellehammer system. The windlass and five winches have been supplied by Clarke, Chapman & Co Ltd.

Accommodation

The *Atalante*, being built on conventional lines, has accommodation in the midships structure and aft on the poop and main decks. The fitting out is excellent and the furnishings most attractive. The general disposition of the officers and crew can be seen on the accompanying general arrangement drawing. All the accommodation has been equipped with air conditioning by Nordisk Ventilator A/B. The galley is arranged aft on the poop deck, with the officers' messroom adjoining on the starboard side and the crew's mess on the port side. The latter operates on the cafeteria system.

Navigational aids include R.C.A. radar, Sperry gyro compass, a Simrad echo sounder and SAL log. Radio communication is provided by a Redifon V.H.F. set, main and emergency transmitters, a Dias Electronic emergency transmitter and Ericsson main and emergency radio telephones. The electro-hydraulic four-ram steering gear has been supplied by Donkin & Co Ltd, Newcastle.

The crews' mess room

Propelling Machinery

The 12-cylinder two-stroke single-acting turbocharged Kockums-MAN diesel engine propelling the *Atalante* underwent test bed trials last December. A detailed description of the engine was given in The Shipping World of 22 February 1961. As previously mentioned, this is the largest M.A.N. type engine yet built by Kockums Mekaniska Verkstads AB. (Kockums are shortly to build one 12-cylinder and one 10-cylinder engine of the larger size with a cylinder bore of 840 mm and 1,600 mm stroke.)

The Kockums-MAN engine in the *Atalante*, type KZ 78/155, has been developed from the KZ 78/140 type engine, the piston stroke being increased by 150 mm, and the entire design revised and strengthened so as to allow a high degree of turbocharging. At the maximum continuous rating the output of the engine is 16,200 bhp at 115 rpm. The fuel consumption is 0.334 lb/bhp-hr. The engine is, of course, arranged for burning heavy fuel oil, and the change over from diesel to heavy fuel is carried out by means of a slide valve designed by Kockums. This is operated by a handwheel placed near the main engine control console. The slide moves slowly so as to protect the fuel pumps etc from too rapid variations in temperature.

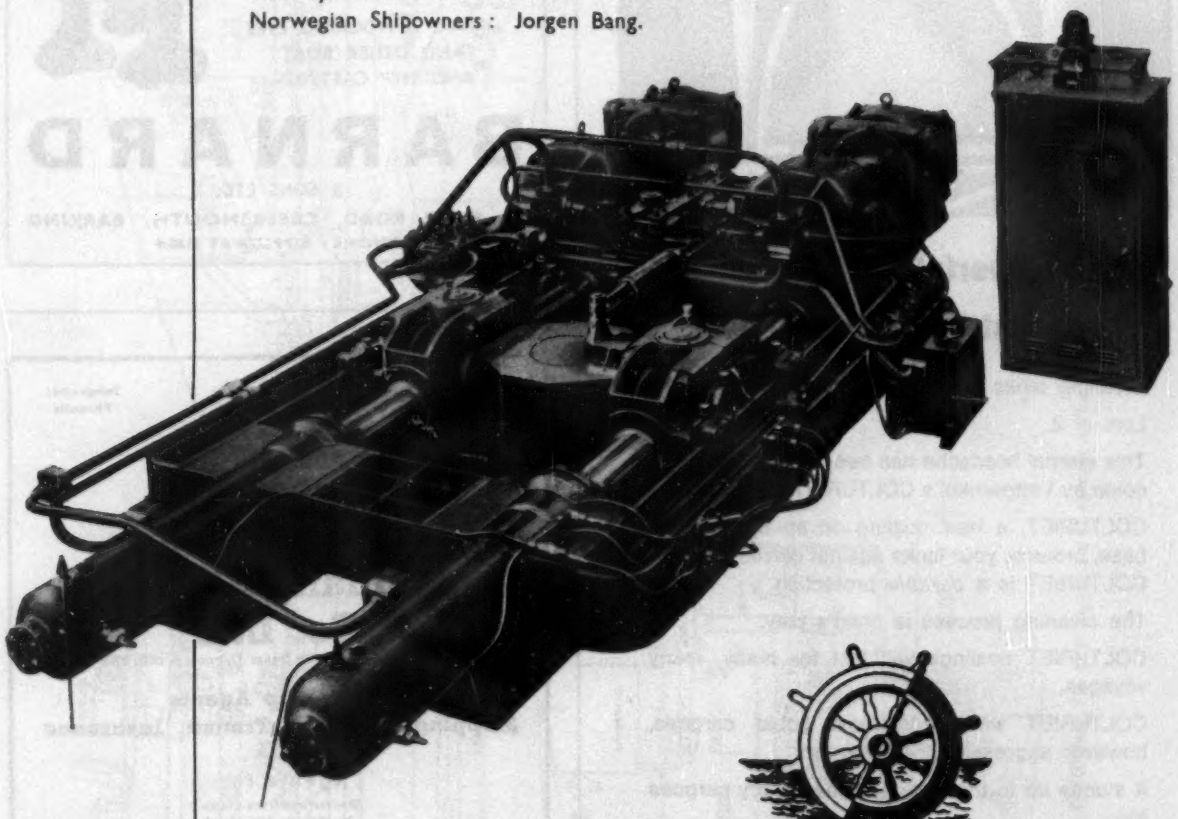
The Kockums' designed remote control console on the lower platform

Turbo-charging is effected on the "impulse-parallel" system with separate exhaust-gas pipes from each cylinder direct to the turbine side of the four turboblowers, which are of the Brown Boveri VTR 630 type. Kockum-built M.A.N. engines are usually pressurised on the "series-parallel" system using all piston undersides. A few of the undersides work in parallel and the remainder in series with the blowers. At normal engine speed the series undersides are idling, but at very low speed, when the exhaust-gas energy is low, these series undersides ensure a satisfactory amount of air for smoke-free combustion. The piston undersides also serve as an alternative to the turboblowers, allowing the engine to be operated at about 75 per cent of the normal speed without the blowers.

As the 12-cylinder engines are provided with four blowers, no reserve for these is required since there always is enough air for running the engine at moderate speed.

The m.t. "ATALANTE" is equipped with a DONKIN steering gear

The m.t. "ATALANTE" (40,000 tons) built by Kockums M.V. for the Norwegian Shipowners: Jorgen Bang.

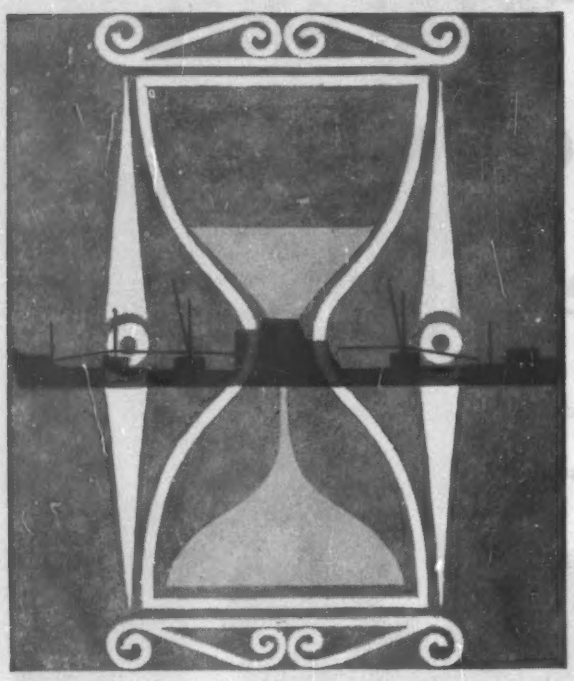


DONKIN

The world's most dependable steering gear

WALKERGATE, NEWCASTLE UPON TYNE. · Telephone: Newcastle 65-6147. Telegrams: Steersman, Newcastle

COLTURIET



your powerful ally

in the battle against time !

Cleaning tanks takes time.

Lots of it.

This eternal headache has been as good as overcome by Vettewinkel's COLTURIET tank coatings.

COLTURIET, a new coating on an epoxy resin base, protects your tanks against corrosion. COLTURIET is a *durable* protection.

The cleaning process is child's play.

COLTURIET coatings will last for many, many voyages.

COLTURIET withstands most liquid cargoes, however aggressive they may be.

It stands up to the wear and tear of dry cargoes too.

COLTURIET will save YOU lots of time and money of course.

colour and protection

Vettewinkel

Tank Coatings Department. P.O. Box 175. Amsterdam. Tel. 123854
Telex 14156

STEEL CASTINGS

FROM ½ lb. to 15 cwt. EACH

BREAKDOWN & REPAIR WORK
given *IMMEDIATE* special attention

BOLLARDS
FAIRLEADS
SHEAVES
THIMBLES
PINTLES
GOOSENECKS

LIFTING & MOORING EYES
AND OTHER BOAT
AND SHIP CASTINGS

BARNARD

& SONS LTD.

75, RIVER ROAD, CREEKSMOUTH, BARKING
PHONE: RIPPLEWAY 1188-9

Codes
Bentley's 2nd Phrase
ABC Telegraphic 7th Ed.
New Boe with "Q" List

Telegrams: Phrontis

The French Somaliland Shipping Co. Ltd.

(S.A.R.L. au Capital de francs Djibouti 5. 000. 000)

Steamship Agents
Shipping, Passage, Transit, Insurance

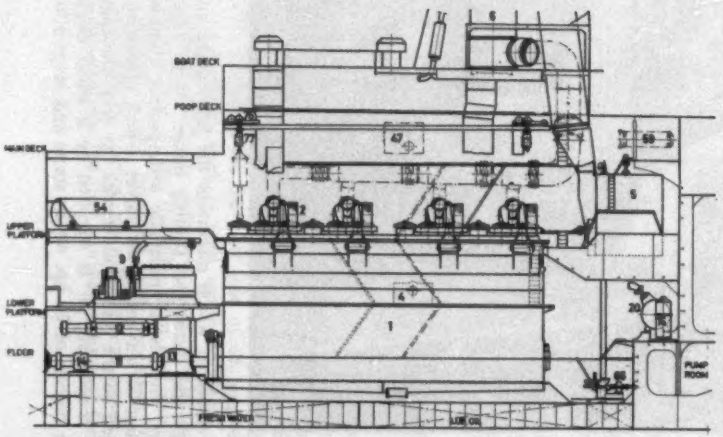
Agents for:

Deutsche Afrika-Linien
Norddeutscher Lloyd
Hamburg-Amerika Linie
Companhia Nacional de Navegacao
The Hellenic Mediterranean Lines Co. Ltd.
Orient Mid-East Lines
India Steamship Company Limited
Soc. Generale de Navigation Maritime, S. A. E
Claymore Shipping Co. Ltd.

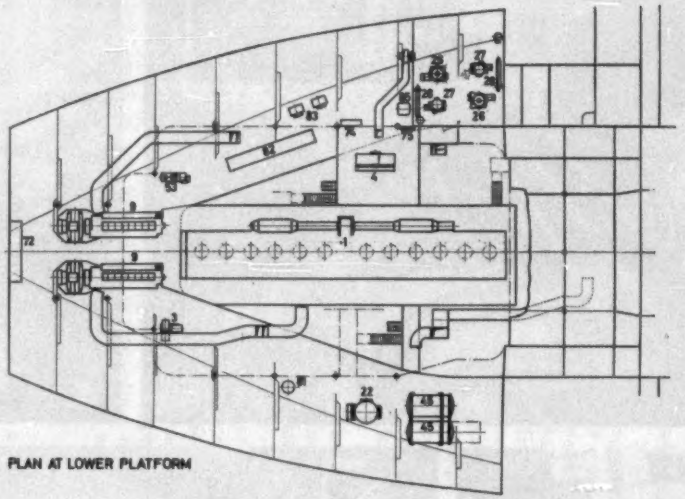
Baloise Marine Insurance Co. Ltd.
The British & Foreign Marine Insurance Co. Ltd.

Offices at:

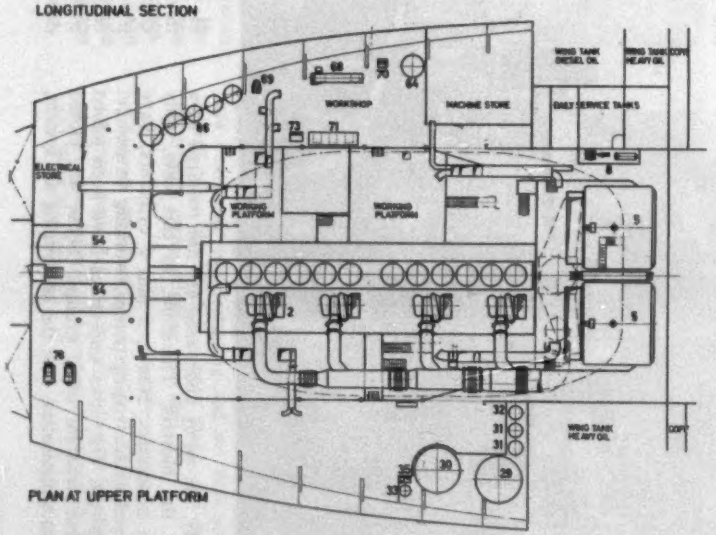
Addis Ababa (Ethiopia) P. O. B. 312 - Tel. 23 11 1885
Aden (Camp) P. O. B. 33 - Tel. 4344
Asmara P. O. B. 1115 - Tel. 848
Assab P. O. B. 52 - Tel. 8
Djibouti (C. F. S.) P. O. B. 15 - Tel. 244, 464
Massawa P. O. B. 6 - Tel. 187



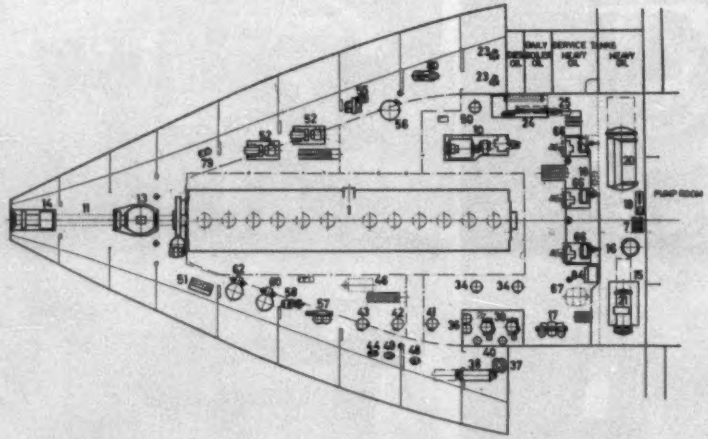
LONGITUDINAL SECTION



PLAN AT LOWER PLATFORM



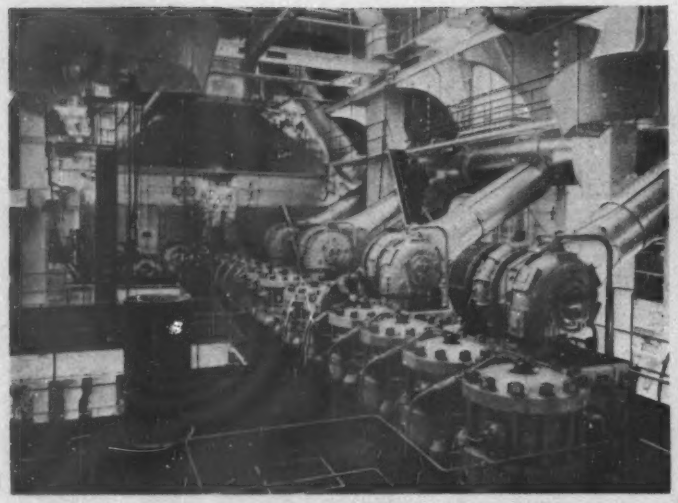
PLAN AT UPPER PLATFORM



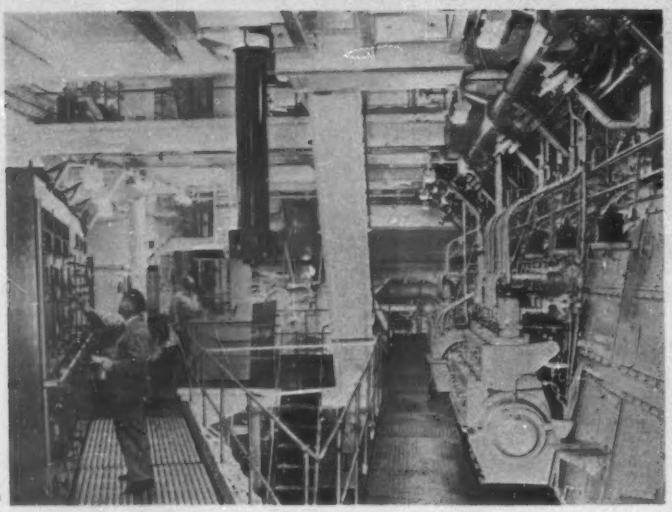
PLAN AT FLOOR LEVEL

Machinery arrangement in the "Atalante", 41,400 dwt. The main engine is a 12-cylinder Kockums-MAN diesel having a maximum continuous output of 16,200 bhp at 115 rpm

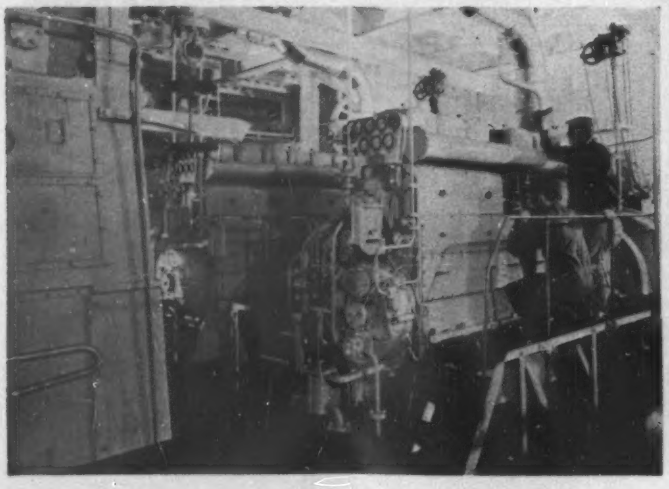
1 Main diesel engine
2 Turbo charger
3 Manoeuvring fan
4 Control console
5 Oil-fired boiler
6 Exhaust gas boiler
7 Hot water circ. pump
8 Oil burning unit
9 Aux. diesel generator
10 Turbo generator
11 Propeller shafting
12 Spare propeller shaft
13 Thrust block
14 Shaft bearing
15 Condensate tank
16 Condensate oil separator
17 Boiler feed pump
18 Condensate pump
19 Condensate vacuum pump
20 Condenser for turbines
21 Condenser for auxiliaries
22 F.W. generator
23 Fuel oil transfer pump
24 Fuel oil circ. pump
25 Sludge pump
26 Fuel oil purifier
27 Fuel oil clarifier
28 Fuel oil heater
29 Lub. oil storage tank
30 Cyl. oil storage tank
31 Engine oil tank
32 Kerosene oil tank
33 Cyl. oil service tank
34 Lub. oil pump
35 Cyl. oil filling pump
36 Lub. oil filter
37 Lub. oil magnetic filter
38 Lub. oil cooler
39 Lub. oil separator
40 Lub. oil heater
41 Main S.W. cooling pump
42 Main S.W./F.W. cooling pump
43 Main F.W. cooling pump
44 Piston cooling pipe drain pump
45 F.W. cooler
46 Piston cooling pipe drain tank
47 F.W. levelling tank
48 Aux. eng. S.W. cooling pump
49 Aux. eng. F.W. cooling pump
50 Condenser cooling pump
51 Fuel valve cooling unit
52 Starting air compressor
53 Aux. air compressor
54 Starting air container
55 Bilge pump
56 Bilge water separator
57 Butterworth pump
58 Fire pump
59 Butterworth heater
60 F.W. hydrophore unit
61 F.W. hydrophore pump
62 S.W. hydrophore unit
63 S.W. hydrophore pump
64 Sanitary tank
65 Cargo oil pump
66 Cargo pump steam turbine
67 Cargo pump el. motor
68 Lathe
69 Drilling machine
70 Grinding machine
71/72 Work benches
73 Fuel valve test bench
74 Instrument panel
75 Day tank level indicator panel
76 Traversing gear
77 Lifting gear
78 Prov. refrig. machinery
79 Cooling water pump
80 Air cond. cooling pump
81 Accommodation F.W. heater
82 Main switchboard
83 Transformer
84 Cargo pump motor starter
85 Telephone box
86 Main engine spare parts



1

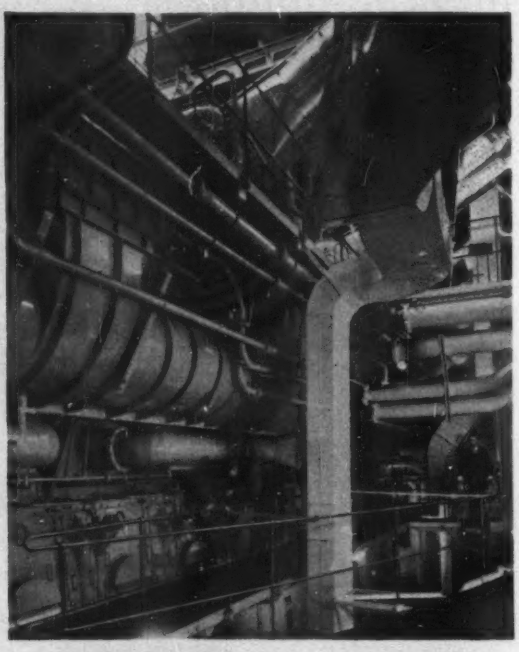


2

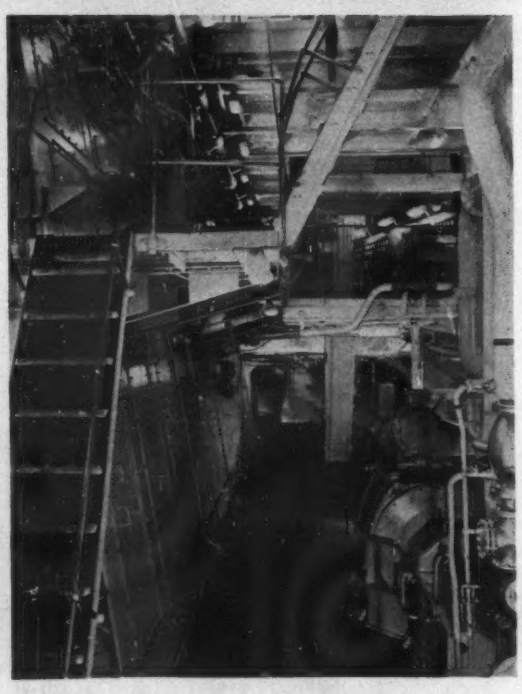


3

1 Top platform on which there are openings for eight main engine pistons
2 Lower platform showing the control console and main switchboard
3 The two diesel-driven 500-kVA alternators
4 Back of engine at lower platform level showing intercoolers and trunking
5 Floor level with the 440-kVA turbo-alternator in the foreground



4



5

Consequently, the series undersides are not required as a reserve for the blowers. Therefore, in this case, only three piston undersides, Nos 4, 5 and 6 cylinders, have been employed as scavenging pumps, working in parallel with the blowers. The other undersides have been joined up into three separate triple groups. These are closed but are in communication with the scavenging air system, the pressure of which minimises the lubricating oil losses through the piston-rod stuffing boxes. With 12-cylinder engines, this piston underside arrangement eliminates no less than 72 scavenging air valves, which otherwise would be fitted on the piston undersides. At very low rpm, additional scavenging air is supplied by a small electrically-driven blower of 20 hp, which starts and stops automatic-

ally depending on the position of the manœuvring handwheel.

Control Console

The remote control console, which has been designed by Kockums, is located on the port side of the lower platform, with the main switchboard close at hand and on the same level as the diesel generators. In addition to the advantages mentioned earlier in this article there is an added safety factor, because in the event of fire the watchkeeping engineer has not so far to climb to get out of the engine room.

In the middle of the console there are two handwheels, one large and one small, mounted vertically. The larger one regulates the starting, stopping and reversing manœuvres and the engine speed. The smaller is used for the acknowledging of orders received by the engine-room telegraph. It is also provided with mechanical safety gear preventing errors in manœuvring. To the right of the handwheel is the auxiliary starting lever, by means of which additional starting air can be admitted, should the engine not fire properly on the first attempt. The reversing cock lever is centrally placed on the top.

On the right side of the console there are 13 exhaust-gas thermometers, one for each cylinder and one for the common exhaust-gas uptake after the turbines. The right hand side also serves as a writing desk. The left side is occupied by control instruments. These include thermometers, gauges, tachometers, a direction indicator and a revolution counter.

On the left-hand front side of the console there is a small handwheel for setting the overspeed governor, and nearby on the top there is an electric switch for the auxiliary scavenging air blower, which normally functions automatically, but can also be started and stopped by hand. Movement of the handwheel is transmitted to the fuel injection pumps by means of a rod provided with a cardan shaft.

Electricity Supply

The two alternators are each rated at 500 kVA, 450 volts, 60 cycles, and have been supplied by Thos. B. Thrige. They are driven by 590-bhp M.A.N.-type diesels built by Kockums, and have been installed at the after end of the engine room at lower platform level. A 440-kVA turbo-alternator has been installed at floor level. This alternator, supplied by Thos. B. Thrige, is driven by a JMW steam turbine of 525 bhp output supplied by Jönköpings Mek. Verkstads AB. The speed of the turbine is reduced from 5,200 rpm to 1,200 rpm by Voith gearing.

Steam is generated in two Scotch boilers supplied by AB Lindholmens Varv. Each has a heating surface of 4,320 sq ft and a working pressure of about 150 lb/sq in. The oil burners are of the rotary type supplied by the Ray Oil Burner Company, San Francisco. There is also an exhaust gas waste heat boiler which is fed with water from the Scotch boilers; surplus steam being led to the atmospheric condenser by a spring-loaded valve.

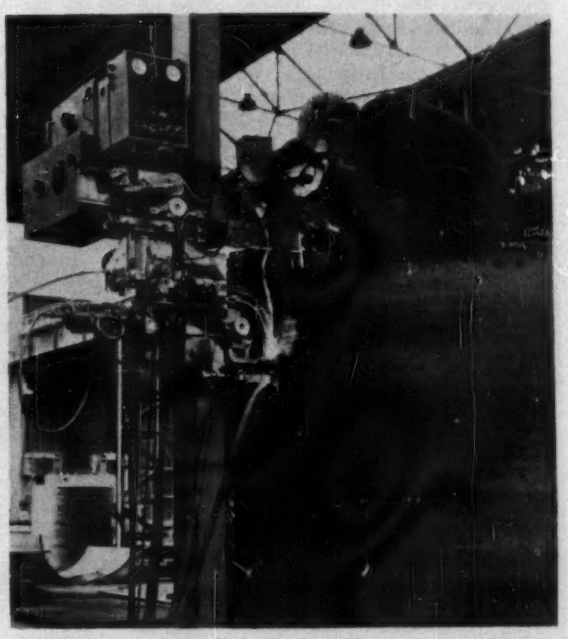
Auxiliary equipment includes an Atlas 15 tons/24 hours fresh water generator, a Kockums 70 tons/hour oily water separator, Balcke main and auxiliary air compressors, Mono hydrophor pumps, a Dawson & Downie Butterworth pump and Woods of Colchester engineroom fans. The workshop on the port side of the engine room at upper platform level is well equipped. Also on the upper engine platform are two large work platforms arranged adjacent to the machine shop and store room. These platforms are provided with openings to take eight main engine pistons, an arrangement which should considerably reduce the time normally required for piston overhaul.

RECENT TECHNICAL DEVELOPMENTS

First Vertical Welding Machine

THE first two British machines to weld plates vertically and automatically are now in service at the Wallsend shipyards of Swan, Hunter & Wigham Richardson Ltd. These machines, which use the Subarc process, British Oxygen's version of slag welding, have been developed and manufactured by B.O.C. at their Gateshead works.

The welding head is mounted on a carriage which travels up a vertical column at a speed controlled by a differential thermo-couple system. The plates are positioned with a gap of about 1¼in between their square-cut edges, and water-cooled copper shoes are clamped inside and outside to form a mould with the plate edges for the molten weld metal and slag. To start the operation an arc is struck at the bottom of the gap in a special copper starting trough containing powder flux to blanket the weld pool. As soon as the powder melts the arc is extinguished. Heat for welding is provided by the passage of current from the welding wire through the molten slag.



The B.O.C. vertical welding machine in use. Speed of welding on 1½in thick plate is about ¾in/min

Weld metal comes from the special wire melting in the slag which also melts the edges of the plate. As the weld metal is deposited the welding head and copper shoes move upwards automatically, governed by controls dependent on the temperature of the slag. The tip of the wire in the slag bath is automatically oscillating backwards and forwards across the gap during welding. Speed of welding on 1⅛in thick plate being used at Swan, Hunter is about ⅞in/min and to weld a complete seam takes under two hours. About 70lb of electrode is consumed per 8ft seam. Previously heavy butt welding has been carried out in the flat position. The Subarc process cuts out expensive plate preparation and intermediate manipulation of the workpiece, thus considerably increasing production speed. In addition less wire, less flux and less current are consumed. No deslagging and no back-gouging are required when the seam has been made, and because of the finish little or no grinding is needed.

LLOYD'S REGISTER OF SHIPPING is establishing a hull plan approval centre at the Society's Newcastle upon Tyne office to serve the districts of Newcastle, Sunderland, Middlesbrough and West Hartlepool.

London's Airports

WILL A NEW BROOM SWEEP CLEAN?

By D. M. Brace

In May 1946 a Lancastrian airliner belonging to British Overseas Airways Corporation took off from Britain bound for Australia. The airport from which it departed lay a few miles to the west of London—it was called Heathrow. It was a typical R.A.F. aerodrome with three runways laid out in a triangular pattern; beyond the runways was a sea of mud; here and there were a few tents and some ex-Service caravans. That aerodrome of 15 years ago bore little resemblance to the major international airport which has risen on its site. It now handles nearly five million passengers a year and has become world renowned as London Airport.

Great have been the changes which London Airport has undergone—and is still undergoing—as it has grown to meet the increasing needs of commercial aviation. In place of the tents and caravans vast new buildings have been erected, for the handling of passengers and cargo, and also for the maintenance of the aircraft using the airport, and to control the movements of those airliners, both on the ground and in the air. London Airport today has a "population" of close on 30,000 to ensure the smooth working of this, the premier aerial gateway into the United Kingdom. But while much of the limelight has fallen on London Airport, other international airports in the United Kingdom have gradually been increasing their business, too, and now London is only one of several aerodromes being used for international services. All these airports have been owned and operated by the Ministry of Civil Aviation.

An Airport Authority

It has now been decided that the control of the major international airports of this country should be transferred to an Airport Authority, an organisation that will be presumably somewhat similar in organisation and operation to the Port of London Authority. Obviously, in the long run this can only be to the advantage of commercial aviation. The frustrating trials and tribulations which seem to go hand in hand with anything controlled by a Ministry will be eliminated; an Authority will have much greater freedom of action.

Before the war the main responsibility for providing aerodromes in the United Kingdom rested with local authorities, the only ones owned by the State being those at Croydon, Heston and Lympne. In this era of the development of civil flying the Government also provided en route facilities—beacons, radio aids etc—but these were of a very limited nature in those days. When the war ended it was realised that the need to provide ground facilities would be far beyond the ability of the young commercial aviation industry, and it was then decided that the State should own and manage the major airport required for scheduled services. While the war was still in progress it was decided to build an aerodrome within easy reach of London for R.A.F. Transport Command. Though this aerodrome was to be built along standard R.A.F. lines, it was realised that it could form the basis of a new international airport for London. Croydon, which had, of course, been the premier airport for London in prewar days, would obviously be far too small for the big airliners that would be entering service once the war was over.

The total expenditure on London Airport to date amounts to almost £28 million, and with further development work planned this total will soon pass the £30 million mark. In the mid-1950s it was decided that Gatwick should be developed to act both as an overspill aerodrome to take some of the load off London Airport, and also as a bad weather diversion field when London is closed. Gatwick's full potential is only now emerging as more and more of the independent companies are planning services from there. While all this work has been going on south of the border, in Scotland the Government have been spending considerable sums on developing Prestwick as the second major international airport of the United Kingdom. The runways have been both strengthened and lengthened, and recently approval has been given for the construction of a new terminal building.

In a recent White Paper issued by the Ministry of Aviation it was stated that "the time has come to decentralise the ownership and management of the State aerodromes." It recognised that wide differences existed between the various types of aerodromes, and, as a result, it is planned that the civil airports which are at present under the control of the Government should fall into four groups.

The first group comprises London Airport, Gatwick, Stansted and Prestwick. The White Paper points out that in 1960 these airports handled nearly 60 per cent of the passengers passing through United Kingdom aerodromes. They are, it states, the principal gateways into the country for normal scheduled services. It is these four aerodromes which are to come under the control of the Airport Authority, which will also be responsible for planning, building and managing any new airports that may eventually be required. The Authority may also be made responsible for providing and managing an international heliport in Central London.

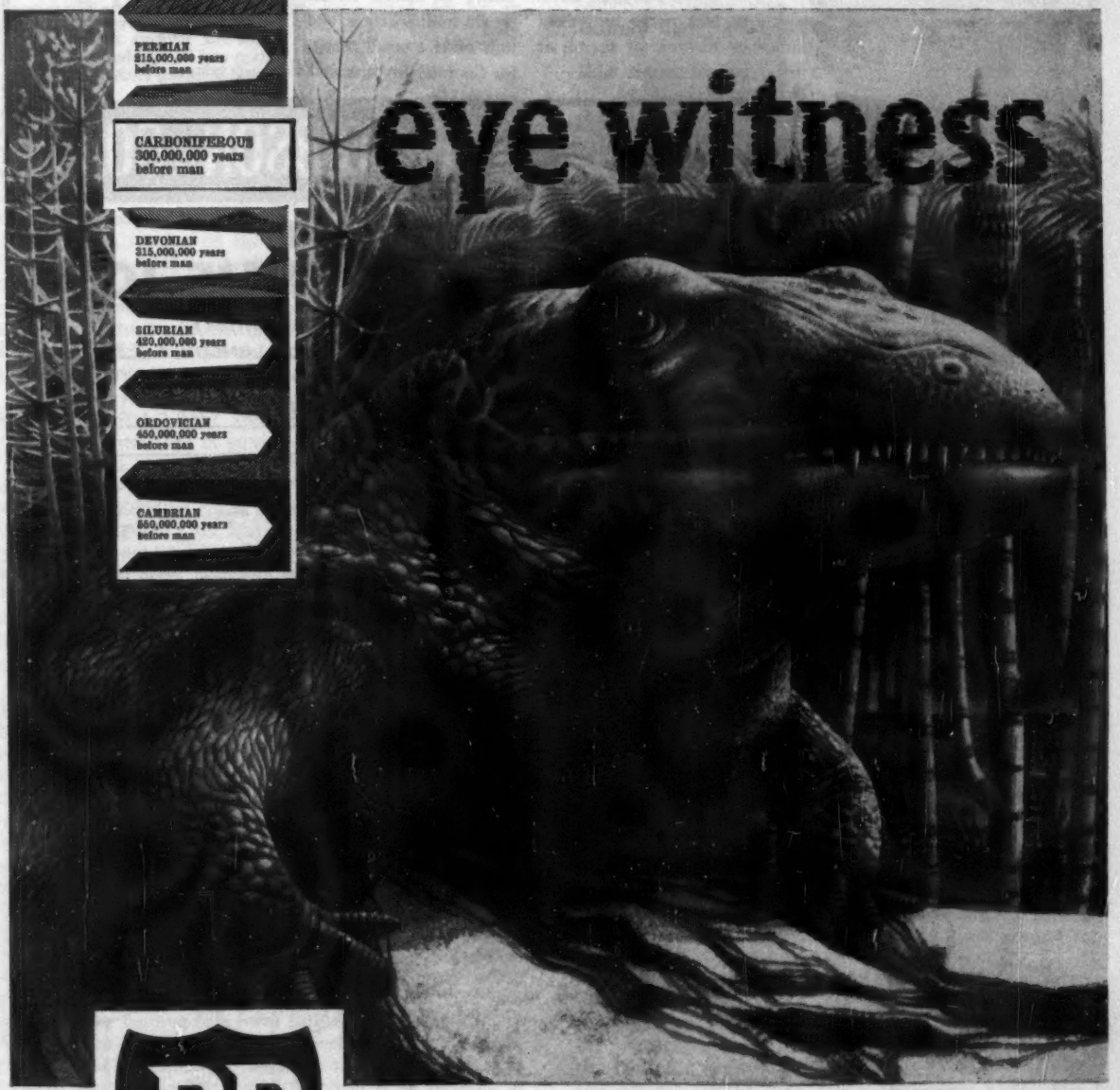
The Role of Stansted Airport

It is, I think, interesting to note that Stansted is included in this list of "major" airports. The traffic at present passing through this airport is very limited, and is almost wholly confined to charter flights. However, for some time past it has been considered likely that a third airport for London would be required in the not distant future, and it may well be that a tentative decision has been taken that Stansted will fill that role. With London Airport serving the West, and Gatwick the South, it is logical that an airport to the north of London would be ideal. Stansted lies about 2½ miles north-east of Bishop's Stortford, and is roughly the same distance from the centre of London as is Gatwick. It may well be that if cargo movements by air increase to the extent that many of us believe they will, there may come a day when a special airport exclusively set aside for the handling of cargo aircraft will be necessary. Perhaps Stansted will be earmarked for that duty. This aerodrome already has one of the longest runways at a civil aerodrome in Britain; it is 10,000ft in length and was laid down during the war as one of the special runways to which badly damaged aircraft could be directed. But even if Stansted is not destined for cargo work it seems that it is intended to play a big part in the future development of civil aviation in Britain.

The second group of aerodromes are those which serve principal centres of population but which do not fall into bracket of "international gateways." There are given in this group—Aberdeen, Belfast, Blackpool, Bournemouth, Cardiff, Edinburgh and Glasgow. It will be noted that there are a number of aerodromes absent from this list which one would expect to see listed—such places as Manchester, Birmingham, Newcastle and Liverpool. In these,

Mastodonsaurus the stegocephalian, with a skull three and a half feet long, was the largest of the world's amphibians, a creature of the Carboniferous swamps that existed between 215 and 300 million years ago. Long before man came it lived out its life in the still waters where in the bottom silt the world's future oil supplies were already germinating. BP today draws millions of barrels annually from the Carboniferous levels in the Middle East and the English Midlands.

Some of the world's finest crude oils are those from the BP wells. From them BP laboratories and refineries have produced the **BP Energol** range of marine lubricants now long proven in service with major shipping companies. Covering every requirement of modern marine engineering **BP Energol Marine Lubricants** are supported at home and abroad by full technical and supply services.



BP **MARINE LUBRICANTS**

Marketed in Great Britain by **THE POWER PETROLEUM CO. LTD. 76-86 STRAND LONDON W.C.2**

. . . . . WINGS OF

COMMERCE AND TRAVEL

Speedy collection and delivery of air freight—passenger plane routes selected for quickest transit. Passenger reservations made and tickets issued for all lines. Our organisation is keyed to the highest standards of efficiency based on expert knowledge and complete co-ordination between land and air services.

LET US QUOTE YOU for group passenger travel or bulk cargo movement by all types of aircraft at current market rates.

WITHOUT EXTRA COST we handle all air freight routine details, and only make a small charge for Consular Invoices.

THERE ARE NO AGENCY FEES. We are approved by I.A.T.A. as Airline Agents. Member of the Air Brokers Association and Baltic Mercantile and Shipping Exchange

E.A.GIBSON & CO.LTD

'PHONE

AVENUE 1050

(15 lines)

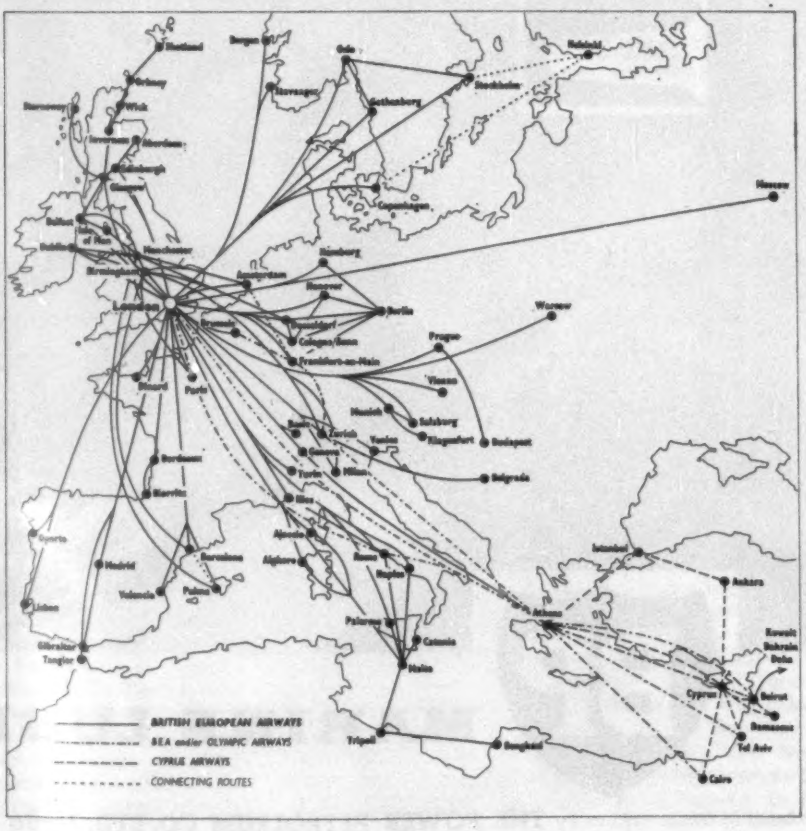
100 FENCHURCH STREET, LONDON, E.C.3

Telegrams: "Blueribair, Telex, London"

A HUNTING GROUP COMPANY

BEA

LARGEST SCHEDULED CARRIERS OF AIR FREIGHT WITHIN EUROPE



For complete details on how BEA air freight services can help you, contact your nearest BEA office, or consult your usual shipping and forwarding agent.

and many other cases, the airport is already under the control of the local authority, and not the State. In the case of the Group II aerodromes the Government consider that future development "can best be furthered under local ownership and management with the support of local resources."

The remaining 11 State aerodromes are placed in two groups—Group III: Benbecula, Inverness, Islay, Kirkwall, Machrihanish, Stornoway, Sumburgh, Tiree and Wick; and Group IV: Aerodromes serving the Isles of Scilly (St Just and St Mary's). With both groups the Government recognize the importance of these aerodromes, but, at the same time, admit there is no scope for transferring their ownership to the local communities. In both cases the Government, it is stated, are exploring the possibility of arranging for the management to be carried out by an agent on their behalf.

Financial Self-Sufficiency

Throughout the White Paper there are continued references to the necessity for the airports to pay their way, but it is pointed out that the rate of progress made towards financial self-sufficiency will need to be carefully considered in the light of what the industry can bear at any particular time. Obviously it is desirable that the airports should cease to be a burden on the taxpayer. For too long they have been the butt of much criticism (particularly from the shipowners) on the amount of money they have annually consumed. But I wonder if there is any port authority in the world that has ever had to meet such vast and far-reaching changes in such a short period as has London Airport in the past 15 years.

When the runways of London Airport were planned lengths of 6,000/7,000ft appeared to be suitable for all types of airliners then in service and projected. Who could have foreseen the advent of the runway-eating big jet airliners, with their requirement of 10,000ft and more of paved area? Equally, could it have been forecast that airliners weighing 170 tons, and more, and carrying over 150 passengers, would be in service less than ten years after buildings had been designed to handle plane-loads of 70 to 100 passengers? What will those self-same critics say in another five or ten years if the vertical take-off and landing airliner is in general service—that the 10,000ft runways should never have been constructed?

It will obviously not be an overnight operation to turn Britain's airports into profit-making organisations. Any State-controlled arrangement is, of course, notoriously a money-waster, and it is to be assumed that once the Airport Authority is in being a certain amount of expenditure will be immediately reduced, but the Authority will still have the task of providing new buildings and services in order to keep pace with aeronautical developments. The new long-haul building in London Airport's central area is typical of the changing pattern of requirements though (heaven knows) this is one building that is long overdue—for too long have long-distance travellers had to put up with the squalid "temporary" buildings along the north side of the airport. Already the airlines are complaining that it costs them too much to bring an airliner into London. The landing fees for a fully-laden Boeing 707 are in the region of £260, which, on a weight-for-weight basis, must be far in excess of anything that is charged to a liner at any port in the world. Yet will it be possible to make the airport pay without further increasing the landing fees? In the same way future developments at other airports will probably need financial assistance from the State for some time to come. The laying down of a second runway at Gatwick is already being mooted; this would probably cost at least £3 million. If the landing fees were increased to meet expenditure of this level they would reach prohibitive levels, and so would turn away the traffic that the second runway was planned to cater for.

The Airport Authority is undoubtedly going to have a very harassing time, particularly during its early formative period. As was noted earlier, the Authority "might be made responsible for providing and managing an international heliport in Central London." Just a few days before the White Paper announcing the impending establishment of the Authority, the Ministry of Aviation issued the report of a committee which has been deliberating over the past two years on possible sites in the London area for helicopter stations. The main recommendation of the report is that there are three sites which are considered "the most promising"—Nine Elms, Cannon Street Station and St Katharine Docks. In its deliberations the committee (which was under the chairmanship of Mr G. I. Morris) assumed that regular helicopter services between London and the near Continental countries will begin in about 1965, or soon after, and that initially 25-seater machines will be used. After making allowance for executive and charter flights, cargo and mail flights, as well as scheduled passenger flights, the committee estimate that by 1975 peak traffic could amount to 20 to 25 movements per hour, with an annual passenger total of about 1½ mn.

Heliport Requirements

It is considered that a heliport should be broken down into a number of various areas, each interdependent on the other, but all contributing to the operation of the station. The first would be the pad—the area in which helicopters would land and take off, and this should be about 400ft by 200ft. Next there is the apron, where helicopters would stand while loading and unloading; this would connect with the apron by taxiways. Third would be the terminal and car parking areas. On the basis of 25 movements per hour it is estimated that an area of about 12 acres would be needed, but of course some reduction of this figure could be achieved if the apron and pad were on an elevated platform.

All three of the sites listed by the committee have some drawbacks, and it is difficult to see which would provide the least difficulties if a decision to go ahead were taken. In the case of St Katharine Docks, for instance, two large blocks of flats, housing some 800 people, would have to be demolished, in order to provide a clear approach into the heliport. In addition a number of cranes in the adjoining docks and wharfs would have to have their jibs reduced in length.

It needs little imagination to realise that construction of a heliport such as this would be a costly operation—probably as high as £5 million. However, it seems inevitable that some time in the next decade London will have to have its own terminal facilities for handling large helicopters. The vertical take-off airliner may one day become a reality, but it is unlikely that it will ever have a noise level low enough to allow it to operate city-centre to city-centre services. On the other hand helicopters operating these types of flight would seem to be "just around the corner."

A few weeks ago I flew from Paris to London in one of BEA's new Vanguard airliners. The flight was accomplished in 55 minutes, but the journey time to and from the airports added at least an hour to the overall time from the centre of Paris to the centre of London. By helicopter the journey would have taken about 1¼ hours, but I would have started and ended my journey in the centre of the respective cities.

Again, a few days ago I had to visit a ship lying at Tilbury; the road journey each way consumed well over an hour. Oh for a Port of London Authority helicopter service of the type operated so successfully by the Port of New York Authority!

Air Charter Market

THE COLLAPSE OF A MAJOR INDEPENDENT

By a Special Correspondent

ALTHOUGH the financial difficulties experienced by Overseas Aviation (C.I.) Ltd resulted in extra August work for brokers on London's air charter market, it was business they handled with, if not reluctance, at least a certain tinge of regret. The collapse of Overseas Aviation as an effective aircraft operating concern, and the circumstances that brought about this state of affairs, could do considerable harm to the market. Mr A. Milward, chief executive of British European Airways, has already committed himself by commenting: "This has done civil aviation no good at all."

Overseas Aviation, although comparatively new, was not a small concern, and in fact in fleet size among Britain's "independents" ranked second only to British United Airways. The number of passengers affected by the cessation of their operations totalled many thousands, but, of course, the extent to which the company's difficulties was made known was far wider. The Press and radio gave extensive coverage to Overseas' troubles, and the plight of stranded and disappointed holidaymakers. Fortunately, air brokers and other airlines rallied round to carry out a rescue operation, and the worst the passengers experienced was a delay of a day or two. Nevertheless how much confidence of the public did air charter companies generally lose?

Uneconomically Low Rates

Discomfiture was not the prerogative of the passengers only—tour operators and their pockets suffered too. Not only did they have to make alternative transport arrangements for their clients, but these new arrangements often cost them more, an extra amount which they considered should not be passed on to their clients. It was the uneconomically low rates they quoted that Overseas Aviation alleged to be partly responsible for their poor financial position. Has the confidence of the tour operators in charter companies also lessened? The charter companies have some consolation in the knowledge that tour operators, more so than the travelling public, are better aware of their problems, and the bitter pill of this whole affair was somewhat sweetened by the special arrangements made by the British Independent Air Transport Association's member airlines to meet the advance commitments of Overseas Aviation. Certainly charter companies cannot afford many such incidents at times when scheduled airlines are continually introducing new special low fares to attract passengers.

This unhappy episode was the dominating feature of the London air charter market in August. The demand for equipment to rescue stranded passengers gave brokers a hectic spell, which started about the middle of the month. It was fortunate in this respect that at the time the whole unfortunate business began the market was undergoing a period of little inquiry, and aircraft availability was abnormally high for the time of year. Activity on the market at the beginning of August was at a comparatively low level, contrasting with the firm tone that predominated towards the close of July. There was hardly anything of outstanding interest among what little fresh business came forward during the first few days of August, and most of the inquiry being worked was an inheritance of the previous week's trading. Attention of the market generally was concentrated on the forthcoming six weeks, although a certain amount of business was concluded for October/November movement. In the Far East section there was a good number of aircraft available for movement westwards during August and September, but charterers showed no eagerness to take advantage of this situation, and only a small number of somewhat tentative inquiries were made.

During the following week, the first full week of August, the condition of the market failed to improve appreciably. There was little inquiry, and fixtures reported were below what is expected for the time of the year. What inquiries did come on to the market were mostly for the transport of ships' crews from Hong Kong and Japan to Europe. In spite of aircraft availability in the Far East, only a small amount of firm business was concluded because of the awkward size of the groups involved.

It was in the following week that conditions changed dramatically and brokers found themselves hurrying about in search of aircraft to fulfil the commitments of Overseas Aviation. In other sections of the market, however, there was no abnormal activity. Among ships' crew business the Far East route predominated, but because of uncertainties over date requirements charterers were often unwilling to commit themselves.

Alternative Arrangements

In the succeeding week brokers were still active in making alternative arrangements for flights originally to have been operated by Overseas Aviation, and having dealt with most of the more urgent demands the brokers were concerning themselves with the work that was to have been undertaken by Overseas during the coming winter sports season and also next year. Elsewhere on the market activity improved after the quiet of the previous few weeks. Fixtures for prompt business were concluded on the Far East route, where rates, particularly westbound, were very much in charterers' favour due to the numbers of aircraft available during the forthcoming few weeks. Concurrently there was a reasonably strong inquiry for trans-Atlantic movements, mainly one-way journeys, in both directions, with ships' crews.

By the last week of the month conditions on the market had returned almost to normal after the disruption caused by the Overseas Aviation affair. Charterers were once more in search of equipment to lift ships' crews from Hong Kong, Tokyo and Taipei to points in Europe over dates from prompt to end-October. With a reasonable supply of aircraft available out East, September movements were expected to present no problems, but the position for October onwards is occluded, depending to a large extent on eastbound fixtures. After the next two or three weekends the aircraft situation in Europe should resolve itself.

August saw what the airline concerned—K.L.M. Royal Dutch Airlines—claims as the biggest ever freight charter in civil aviation history. It involved the shipment of 1,000 tons of insecticide from America and several points in Europe to Cairo. The insecticide was urgently required in Egypt to save the cotton crop from destruction by a pest disease. Over 660 tons had to be flown across the Atlantic, involving 31 all-cargo flights as well as shipments in the freight compartments of DC8 jet passenger airliners. There were also many all-cargo flights from points in Holland, Germany and Switzerland.

Oil Topics

U.S. BUNKER EMBARGO

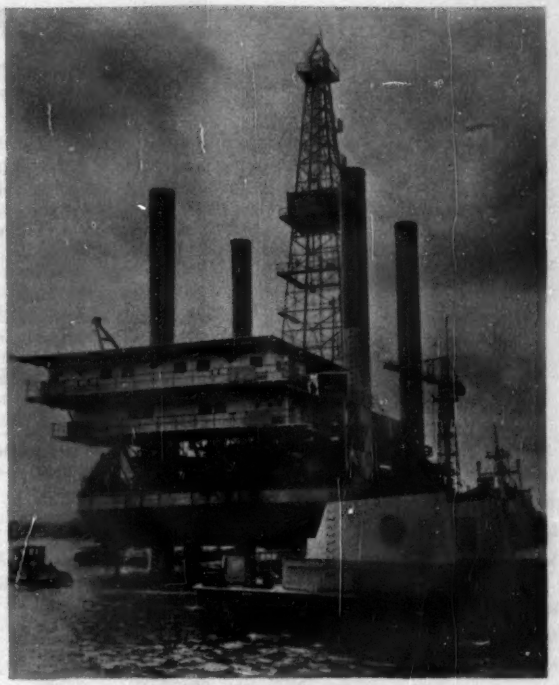
REPORTS IN *Lloyd's List* of recent voyages of British ships which have been denied supplies of bunker and lubricating oil by American companies following or preceding calls behind the Far East iron curtain have drawn attention to the fact that this particular piece of restrictive U.S. legislation remains effective. It has, indeed, been rigidly applied ever since it was brought in at the end of the Korean War in July 1953. The ban, operated through a licensing procedure, applies to all foreign ships trading to a Russian Far East port or a port in Communist China, North Korea, North Viet Nam or Macao—areas where a U.S. trade embargo operates—within a period of 120 days before or after the date of taking on supplies without apparent rhyme or reason in the context of today's political scene, the ban does not apply to ships visiting Russian ports in Europe.

Fluctuating Black List

RECENT INSTANCES reported include a British vessel on passage from Cuba to Nakhodka with sugar which was refused bunkers and lubricating oil from Caltex at Yokohama; the oils were supplied by a British company. Another ship of the same fleet, which previously had taken wheat from Vancouver to China, ran into the same difficulty at Cape Town on a later voyage with Australian wheat for Europe. Again, a British ship with another cargo of sugar from Cuba to the U.S.S.R. Far East was refused lubricating oil at Panama and in Japan. The ban on American supplies is operated at the supply end and not at the time of the original order, which may have been put through an office in London, New York or elsewhere. It involves clearance with the State Department, passed on through the local U.S. Consul. Not long ago a ship was delayed five days while waiting this final clearance. In effect, the embargo has meant the creation of a fluctuating black list which has nothing to do with whether the cargoes carried are on the restricted list or not. It is an example of American susceptibility overruling American interests and the power of the dollar, for the only sufferers from this piece of U.S. legislation are the American oil companies and their trading offshoots.

The "Triton" Goes to Work

THE MOBILE oil drilling platform *Triton*, pictured above, has now taken up its first drilling station 2½ miles off the Netherlands coast between Scheveningen and The Hook. It will be drilling a 6,500-ft exploration well for the N.V. Nederlandse Aardolie Mij, the joint Shell-Esso concern which has the concession for oil exploration for the whole of the Dutch coast. The *Triton* was built for Shell in 1959 by Clelands (Successors) Ltd, Wallsend, and was originally intended for drilling in Lake Maracaibo, Venezuela (*SW*, 16.12.59). At that time the oil situation was changing drastically and it was decided not to proceed with this part of the Lake Maracaibo project. The platform has been idle since then. The *Triton* has a length of about 125ft, a width of about 65ft and weighs some 2,400 tons. The four legs on which it stands when drilling are each 170ft long. The total complement during drilling operations is 38. There is a landing deck for helicopters. The hydraulic jacking gear, driven by pumps powered by four Rolls-Royce alternators, was designed by the De Long Corporation of the United States. Modifications to the *Triton's* equipment and accommodation have been carried out at Rotterdam.



The platform "Triton" with its drilling rig on board

RECENT SHIP SALES

MOTOR vessel *La Orilla* (10,800 dwt, 6,256 grt, 3,272 nrt, built 1955 by Bartram & Sons Ltd) sold by Buries Markes Ltd to Norwegian buyers, reported to be the Norwegian Salt Co, for about £515,000 with delivery U.K. after a round voyage to Churchill.

Motor vessel *Sunoak* (12,650 dwt, 8,584 grt, 4,972 nrt, built 1956 by Uddevallavarvet A/B) sold by Skibs A/S Hassel (A/S Rederiet Odfjell), Bergen, to French buyers reported to be the Soc. Générale de Transports Maritimes, Marseilles, for about £700,000. The transaction is understood to be subject to import and export licences and delivery is scheduled for the end of the year at Marseilles.

Turbine steamer *Eviqueen* (15,347 dwt, 10,692 grt, 6,364 nrt, built 1956 by Mitsubishi Zosen) sold by Daroca Cia. Nav. S.A., Monrovia, to Greek buyers for $1,850,000 with prompt delivery Japan and renamed *Souniotis*. Buyers are reported to be Sounion Shipping (Piraeus) Inc., and she will trade under the Greek flag.

Motor vessel *Eskbank* (9,040 dwt, 5,137 grt, 3,039 nrt, built 1937 by Wm. Doxford & Sons Ltd) sold by Inver Transport & Trading Co Ltd (Andrew Weir & Co Ltd) to the Chip Hwa Shipping & Trading Co Ltd, Singapore, for £112,500 and to be renamed *Hsin Ann*.

Lengthened Liberty-type steamer *Amvrakikos* (ex-*Andros Pilgrim*, ex-*Panachrandos*, ex-*Walter du Mont*, 12,180 dwt, 8,444 grt, 6,380 nrt, built New Orleans 1943 by the Delta Shipbuilding Co, Inc., converted from tanker 1954, lengthened 1955) sold by Sutherland Shipping Corp., Piraeus, to Liberian buyers for retention under Greek flag.

Lengthened Liberty-type steamer *Patraikos* (ex-*Andros Stream*, ex-*Alpheus*, ex-*David Holmes*, 12,449 dwt, 8,479 grt, 5,645 nrt, built New Orleans 1943 by the Delta Shipbuilding Co Inc., converted from tanker 1955, lengthened 1956) sold by Commerce Marine Corporation, Piraeus, to Liberian buyers for retention under Greek flag.

Lengthened Liberty-type steamer *Kifissos* (ex-*Andros Seaman*, ex-*Stenies*, ex-*Seathrill*, ex-*Horace Dee*, 12,365 dwt, 8,443 grt, 6,419 nrt, built Los Angeles 1943 by California Shipbuilding Corp., converted from tanker 1954, lengthened 1956) sold by Produce Shipping Corp., Piraeus, to Liberian buyers for retention under Greek flag.

NEW CONTRACTS

Shipowners	No. of Ships	Type	Tons d.w. (gross)	Dimensions (ft.) L.b.p.(o.a.) × B × D.(dft.)	Delivery	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Yards in Great Britain and Northern Ireland										
Govt. of Malaya	6	Suction dredgers	—	45 × 20 × 5	—	—	NIL	—	—	Simons-Lobnitz
Newport Screw Towing Co	2	Tugs	—	—	1962	11	Diesel	1,260	British Polar	Richard Dunston
Overseas Yards										
Cie. Maritime Belge	4	Cargo	11,810	—	1963/4	17	6-cyl diesel	9,000	Sulzer Bros	Cockerill-Ougree
World Wide Co (Managers) Hong Kong	1	Cargo	14,650	—	1962	—	B & W diesel	7,600	Shipbuilders	Hitachi S.B. & E. Co
Overseas Commerce Corp, Panama	2	Ore/oil carrier	46,000 (30,700)	—	1963/4	16.5	Geared turbine	20,250	—	Kawasaki Dockyard
San Juan Carriers	*2	Ore/oil carrier	67,500	—	1962	17.6	Geared turbine	22,500	—	Mitsui S.B. & E. Co
German owners	1	Bulk carrier	30,500	—	—	—	Diesel	10,500	—	Lubecker Flender-Werke

* Subject to Japanese Govt. approval

LAUNCHES

Date	Shipowners	Ship's Name and/or Yard No.	Type	Tons d.w. (gross)	Dimensions (ft.) L.b.p.(o.a.) × B. × D.(dft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Yards in Great Britain and Northern Ireland										
Sept. —	Elder Dempster Lines	*Fourah Bay*	Cargo	8,000 (7,700)	430 × 62 × 36(25.2)	16	5-cyl Sulzer diesel	7,400	Shipbuilders	Scotts' S.B. & E. Co
Sept. 6	Falaise Ore Carriers, Bermuda	*Finnamore Meadow*	Ore carrier	18,000	—	—	4-cyl Doxford diesel	—	N.E. Marine	Austin & Pickersgill
Sept. 11	Hain S.S. Co	*Trefusis*	Cargo	13,000	470 × 65 × 40(27)	14	Sulzer diesel	6,900	Wallsend Slipway	John Readhead & Sons
Sept. 12	Pelagic Trawling Co	*Pelamid*	Trawler	(250)	—	—	Diesel	—	Bristol Siddeley	T. Mitchison
Overseas Yards										
July 7	Kano Kisen K.K.	*Kinsho Maru* (582)	Tanker	(2,150)	—	—	Diesel	—	—	Shihoku Dock
July 19	Shinto Kaiun K.K.	*Toyo Maru No 8* (178)	Cargo	(3,850)	—	—	Diesel	—	—	Osaka S.B. Co
July 21	Shinnihon Senpaku	*Sumaharu Maru* (923)	Ore carrier	21,140 (13,700)	—	13.8	7-cyl Sulzer diesel	7,700	Shipbuilders	Mitsubishi H.I. Reorg
July 27	Mitubishi Shipping Co	*Hampton Maru*	Cargo	12,000 (9,350)	—	18.3	9-cyl UEC diesel	13,000	Shipbuilders	Mitsubishi S.B. & Co, Hiroshima
July 27	Principe Cia. Nav. S.A., Panama	*North Princess*	Bulk carrier	21,100 (15,200)	547.95 × 74.2 × (44)	15	Sulzer diesel	9,000	Shipbuilders	Ishikawajima-Harima H.I., Aioi
Aug. —	U.S.S.R.	*Krasnograd* (1090)	Cargo	12,200 (9,000)	—	—	Sulzer diesel	—	Shipbuilders	Wartsila-Koncernen A/B, Crichton-Vulkan
Aug. 12	Kawasaki Kisen K.K.	*Tachikawa Maru* (1009)	Bulk carrier	(13,500)	—	—	M.A.N. diesel	—	Shipbuilders	Kawasaki Dockyard
Aug. 17	Govt. of Canada (Dept. of Transport)	*Maxwell* (28)	Pass./car ferry	(2,300)	259 × 60 × 20(13)	13	Quad.-scr. diesel-electric	5,200	Ruston/ Westinghouse	Halifax Shipyards
Aug. 25	H. Kuhnle	*Nordvind* (423)	Cargo	13,000 (8,000)	442 × 62 × 40.25 (30.33)	15	B & W diesel	6,090	Akers M.V.	Bergens M.V.
Aug. 26	Cie. Maritime Belge	*Mol* (307)	Cargo	12,000 (8,900)	444.58 × 62 × 39.33 (29.1)	14	Sulzer diesel	5,875	Shipbuilders	Kon. Mij "De Schelde"
Aug. 26	Govt of Cuba	*Sierra Maestra*	Cargo	10,000	—	—	Diesel	—	—	VEB Warnow-werft
Aug. 29	Fred Olsen	*Brissac* (662)	Ore carrier	15,100 (11,400)	475.67 × 66.95 × 37 (29)	14.75	Diesel	6,300	Sulzer Bros	Ch. Reunis Loire-Normandie
Aug. 29	Rederi A/B Soya	*Soya-Andrea* (753)	Tanker	40,000 (25,900)	670 × 96 × 48.25 (35.75)	17	Geared turbine	17,500	Shipbuilders	Gotaverken

TRIAL TRIPS

Date	Shipowners	Ship's Name and/or Yard No.	Type	Tons d.w. (gross)	Dimensions (ft.) L.b.p.(o.a.) × B. × D.(dft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Yards in Great Britain and Northern Ireland										
Sept. 5	Ross Group, Grimsby	*Ross Falcon* (1466)	Trawler	(265)	107.5(120.83) × 24.5 × 12.5	—	5-cyl diesel	550	Ruston & Hornsby	Cochrane & Sons
Sept. 5	Devanha Fishing Co	*Corency* (316)	Trawler	(209)	(116) × 23 × 12	—	6-cyl diesel	675	Crossley Bros	John Lewis & Sons
Overseas Yards										
July 14	A/S Skaugas	*Skauholt* (1537)	Bulk carrier	24,500 (15,800)	551.2 × 75 × 46(31)	16.45 (T)	Sulzer diesel	9,100	Uraga Dock	Mitsubishi S.B. & E. Co, Nagasaski
July 20	Kyoei Tanker Co	*Erimo Maru* (321)	Cargo	3,700 (2,600)	317.5 × 45.42 × (19.58)	—	8-cyl diesel	2,800	Itoh Ironworks	Namura Shipyard

RECENT PUBLICATIONS

A BOOKLET produced by The International Nickel Company (Mond) Ltd, entitled *Nickel in s.s. Canberra*, describes some of the many uses to which nickel has been put in the construction of this ship. As a constituent of Monel metal and stainless steel it features in windows, machinery, kitchen equipment and cutlery, while the emergency batteries are of the nickel-cadmium type. The davits are of nickel-aluminium bronze, as are the propellers, while the shafts for the stabilisers are of alloy steel containing nickel, to name only a few examples of its use.

The *Directory of Shipping and Forwarding Agents 1961* has been published by Kenneth Mason Publications Ltd, 167 Victoria Street, London SW1 (price 5s) with a preface by the Rt Hon F. J. Erroll MP, Minister of State, Board of Trade. In the first part of the book head offices of all shipping and forwarding agents are listed; the second section details agents by geographical location. Altogether some 1,200 agents are listed.

A NEW leaflet has been received from Plenty & Sons Ltd, Eagle Iron Works, Newbury, Berks, covers briefly the company's main range of products which comprise pumps, filters, chemical plant and mixers. These leaflets have been printed in French, German and English, on the new BSA 4 size paper which is being used throughout Europe rather than British quarto size. To supplement this leaflet there are catalogues and leaflets covering the entire range of Plenty equipment.

THE research department of the Imperial Smelting Corporation Ltd, 6 St James's Square, London SW1, has published a new booklet on C-Sentry anodes. This is a useful little publication which first explains cathodic protection and later gives some of its applications in the marine field.

MARITIME NEWS IN BRIEF

Mr Robert Johnston, chief engineer of the *Queen Mary*, is to retire at the end of her present voyage. Mr. Johnston, who has served in senior positions in both *Queen* liners, has been chief engineer of the *Queen Mary* since July 1956. His successor is Mr W. A. Segar, who has been the liner's staff chief engineer since July of last year.

Mr M. Meek has been appointed naval architect of Alfred Holt & Company in succession to the late Mr H. Flett. Mr Meek served his apprenticeship with the Caledon Shipbuilding Co Ltd of Dundee, and he joined Alfred Holt & Co in 1953.

Mr T. A. H. East, joint secretary of the Royal Alfred Merchant Seaman's Society, has retired after more than 41 years' service. Mr D. J. Lafferty has been appointed general secretary of the Society.

Mr K. G. van Staveren, general representative in the United States and Canada for Nederland Line-Royal Rotterdam Lloyd since 1947, retired from his post at the end of last month. He will continue connections with these two companies as consultant. Captain D. Roosenschoon, marine superintendent, has succeeded him as manager of the New York office.

Mr A. C. Sturney has been elected a director of the International Nickel Company (Mond) Ltd. Mr Sturney will be succeeded as general manager of publicity by Mr L. F. Denaro, who will relinquish his appointment as assistant to the managing director.

Mr F. I. Geddes, chairman of the Standing Technical Committee and a member of the General Council of British Shipping, has been appointed a member of the Clean Air Council.

Mr W. Shaw, of Fleetwood, assistant manager of Boston Deep Sea Fisheries Ltd, is to become general manager of the new deep-sea trawling fleet being developed by the Ghanaian Government.

Mr A. H. Kellett, chairman of the National Coal Board South Western Division, has been elected a member of the Joint Ports committee of the Industrial Association of Wales and Monmouthshire.

Mr Ernest Marples, Minister of Transport, is at present on a short tour of shipyards on the Continent. He will be visiting Holland, Germany and Sweden. The purpose of the tour is to inspect Continental yards and to look at some of the ships which have been ordered by British shipowners from these yards. Vice-Admiral John Hughes-Hallett, Parliamentary Secretary to the Minister of Transport, is to make a similar tour of other Continental shipyards, visiting Denmark, Sweden and France.

A new motorship is to be introduced to the service between Hull and Copenhagen. She is the 2,800-dwt *Freesia* which has been specially built for transporting agricultural products from Denmark, and will operate between the Danish provincial ports operated jointly by Ellerman's Wilson Line of Hull and Det Forenede Dampskibsselskab of Copenhagen.

DR T. P. HUGHES has been appointed joint assistant managing director of the B.B. Chemical Co Ltd, makers of Bostik adhesives, sealing and coating compounds. Dr Hughes was previously with Tube Investments Ltd where he was director of research since 1955. Before that he was for eight years at the Ministry of Supply, first as Head of the Chemistry Department of the Royal Aircraft Establishment at Farnborough, and latterly as chief superintendent of the Propulsion Department

The arrival in Hull of the steamer *Domino* has brought to an end the liner service operated by Ellermans Wilson Line Ltd between the east coast ports of America and the United Kingdom which has been operated for 86 years. The company's vessels will still be sailing across the Atlantic, however, for their sailings to Canada and the Canadian Great Lakes ports are to continue.

Bristol Siddeley Engines Ltd is to be the first customer for the de Havilland Jet Dragon executive aircraft.

* * * *

Burmeister & Wain of Denmark have formed a new subsidiary company known as Burmeister & Wain (Great Britain) Ltd. Mr Jorgen Berring, who previously was employed in Copenhagen as an assistant sales manager, has been appointed London manager. The offices of the new company are at 115 Leadenhall Street, London EC3 (tel: Avenue 3661).

The Isle of Man Steam Packet Co Ltd is to stop its service to Fleetwood, which has been operating since 1876; it will be terminated at the end of the present season. The British Transport Commission has informed the company that the berths there are beyond repair and will be no longer available.

International cargo traffic through the port of Rotterdam has increased considerably in the first half of 1961, during which over 70 mn tons of goods were handled, as against 61.3 mn tons in the corresponding period of last year—a rise of over 16 per cent.

The Liberian ore carrier *Ore Prince* is due at Ore Quay, Tyne Dock, on September 15 from Puerto Ordaz with 37,276 tons of iron ore—a new record for both the Tyne and the United Kingdom. The ore is for the Consett Iron Co Ltd.

Nine passenger ferries for service on the Bosphorus and Sea of Marmara, built or being built for Denizcilik Bankasi T. A. O., Istanbul, at the Clyde shipyard of the Fairfield Shipbuilding & Engineering Co Ltd, are being equipped with VHF radio-telephone equipment designed and manufactured by Cossor Communications Co Ltd.

MR C. E. PARSONS is to be manager of the Overseas Marine Department of Castrol Ltd from 1 January 1962. Mr Parsons joined the Marine Department of W. B. Dick & Company in 1934. In 1956, with the integration of that company into the Castrol group, he joined the Marine Department of the Group Overseas Division. He was appointed assistant manager of the department in 1958

MR R. T. GLADWELL has been appointed industry group manager for Aircraft-Marine Products (Great Britain) Ltd. He will be responsible for the control of the specialised industry groups within the sales organisation. Mr Gladwell joined AMP in 1956 in the Product Engineering Department but was transferred to the Sales Department in 1957. He has been electronics industry manager since 1960

Miss Helle Bang with her father, Mr Jörgen Bang, on board the tanker "Atalante" shortly after the vessel was handed over. Miss Bang is the vessel's sponsor. The "Atalante" is described on page 204

THE LIFEBOAT SERVICE had the busiest month in its whole history in August of this year, when lifeboats of the Royal National Lifeboat Institution were launched on service 160 times. The previous highest figure was recorded in August 1956 when there were 146 launches. The highest figure recorded in wartime was 143 in both December 1939 and January 1940.

SHAREHOLDERS in A/S Moss Vaerft & Dokk, Moss, have been advised by the board to accept an offer to purchase all the capital. The bidders, A/S Kvaerner Brug, Oslo, one of Norway's leading engineering firms, have been reported to be planning to include shipbuilding among their wide activities.

THE Italian independent airline Itavia, of Rome, has ordered two Handley Page Dart Herald airliners with an option on a third. The order is worth about £1 million.

TRANS-WORLD AIRLINES has placed a £35 million jet order for 20 French Caravelle aircraft. The order includes an option on a further 15 Caravelles. Delivery of the airliners from the makers, Sud Aviation of Toulouse, will begin in January 1963.

* * * *

CAPTAIN R. P. LONGSTAFF, master of the liner *City of Exeter*, has been appointed commodore of the fleet of Ellerman Lines Ltd. Captain Longstaff served his apprenticeship with the City Line Ltd, Glasgow, in which he first became an officer in February 1917. He was promoted to command in May 1937.

BRITISH UNITED AIRWAYS have been awarded a contract by the Admiralty for the basic helicopter flying training of 24 Royal Navy and Royal Marine helicopter pilots for the second commando carrier HMS *Albion*. The company will run six courses of four over a period of 43 weeks at Redhill, using Hiller and Whirlwind helicopters. This is the first time that a civil airline will have provided flying instruction for Royal Navy personnel.

MR H. G. STREETS has been appointed a director of Philip & Sons Ltd, Dartmouth. Mr G. A. Philip, a great-great-grandson of the founder, has been appointed assistant managing director.

AT THE LAUNCH of the 18,300-dwt ore-carrier *Finnamore Meadow* from the Southwick Yard, Sunderland, of Austin & Pickersgill Ltd, it was stated that the ship would be handed over in nine weeks time—only 18 weeks after the keel had been laid.

A CHANGE is taking place in the post of Research and Publicity Officer of the National Union of Seamen. Mr Thomas H. Goff has taken a new appointment with the Merchant Navy & Airline Officers' Association and will be replaced by Mr Jim Nash on September 18. At present Mr J. Nash is the officer at the headquarters of the International Confederation of Free Trade Unions in Brussels responsible for coordinating their activities with the trade secretariats.

THE DEATH has occurred of Mr J. C. Mather, deputy chairman and formerly chairman of Cammell, Laird & Co Ltd. He was also vice-chairman of John Holt & Co (Liverpool) Ltd and a director of the Guinea Gulf Line and other companies.

TRAFFIC in the Suez Canal during June amounted to 1,450 vessels totalling 15,163,421 nrt, with a daily average of 48.3 vessels, against 1,543 vessels totalling 15,069,246 nrt and a daily average of 51.4 transits in June last year.

THE marketing and administrative companies in London of Commercial Plastics Ltd, are now at Berkeley Square House, Berkeley Square, London W1.

GEO. A. TOM & CO LTD, shipbrokers, London, are opening a branch office at 43 High Street, Blue Town, Sheerness (telephone: Sheerness 2345).

THE Indian Ministry of Transport and Communications is finalising a scheme for the establishment of a salvage fleet. At present, India has no salvage vessels, either in the private or public sectors. The creation of a salvage service is considered by the Central Government to be an immediate necessity in view of the development of the Indian Merchant Navy.

FIRE ARMOUR LTD, a member of the George Angus group of companies, and Fairmile Construction Co Ltd, builders of small craft at Berwick have cooperated in building a £50,000 56-ft twin-screw fire launch for Kingston, Jamaica. The launch is powered by two Rolls Royce 8-cylinder turbocharged diesels, each developing 300 bhp at 1,800 rpm and driving two fire and salvage sea water pumps to serve three fixed monitors, each capable of delivering 1,700 gallons of water or 2,250 gallons of foam per minute.

THE DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH headquarters has moved to State House, High Holborn, London WC1 (telephone: Chancery 1262).

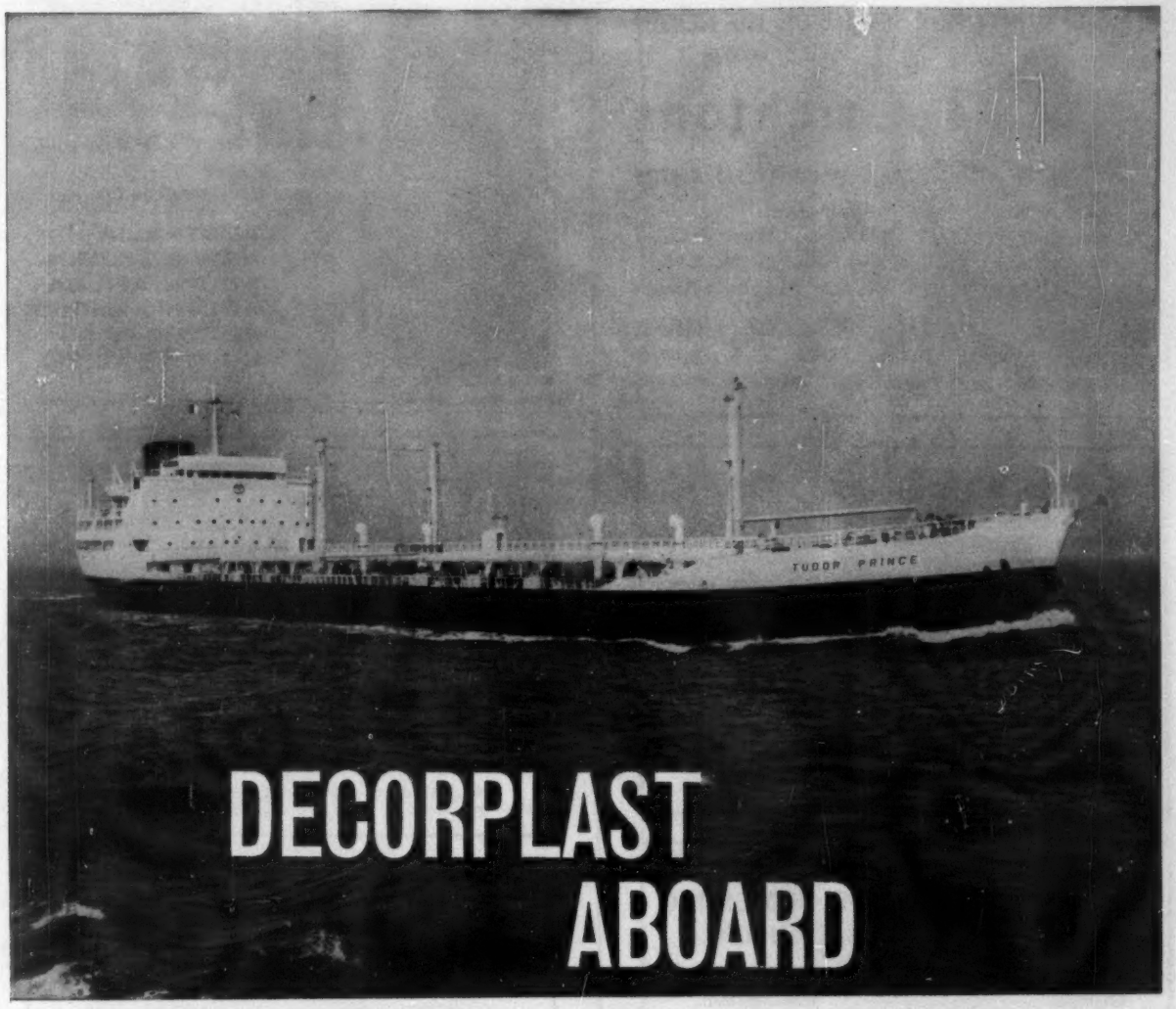
THE DOMINICAN REPUBLIC Government has set up a commission to encourage the greater use of the northern port of Puerto Plata.

FIFTY YEARS AGO

From THE SHIPPING WORLD of 13 September 1911

The Hamburg-Amerika Line is one of the shipping companies which do not see any profit in large express steamers. During the Russo-Japanese War the company sold all their express steamers to the Russian Government with the exception of the famous *Deutschland*. At the end of last year, however, the directors decided to change even this vessel into a pleasure steamer with a low speed. The alterations have now been completed at the "Vulcan" yard, Stettin, and the steamer is to make her first voyage under the name of *Victoria Luise* on the 23rd inst. Her speed has been reduced from 24 to 16½ knots; all her second- and third-class accommodation has disappeared; and now the entire vessel is devoted to carrying 500 first-class passengers. One of the most attractive novelties of the ship is the new promenade deck, which extends from one end of the ship to the other.

Messrs. Harland & Wolff Ltd., Belfast, launched the express steel twin-screw steamer *Patriotic* for the Belfast Steamship Co., Ltd. on September 7. She will be employed on the cross-Channel service between Belfast and Liverpool. Her accommodation provides for a large number of saloon and steerage passengers. In general design and appointments she is similar to the *Heroic* and *Graphic*, but she possesses such features as single-berth cabins and quadruple-expansion engines on the "balanced" principle, similar to those fitted by the builders in the Atlantic liners.



DECORPLAST ABOARD

HARD WEARING SURFACES THAT ARE A.1 FOR SHIPPING

Decorplast, a British made laminated plastic has been used extensively on board the TUDOR PRINCE*. Its attractive designs brighten the living quarters, dining saloon and recreation room. This is of especial appeal to both the crew and her owners — Furness, Withy. Decorplast is not only gay and cheerful but it is extremely hard wearing and can be easily maintained. Decorplast stands up to all climatic conditions and its surfaces will always keep their freshness and colour.

**built by William Doxford & Sons Limited, Sunderland.*

DECORPLAST

Reed PAPER GROUP

LAMINATED PLASTIC

MARINE DEPARTMENT, 2 CAXTON STREET, LONDON S.W.1. TEL: ABBey 4866

24-HOUR SHIP REPAIR SERVICE ON THE MERSEY

Crichtons

FOR

ALL WORK ON SHIPS

Norwegian Agents

Odd Storm Wang & Co., Universitetsgt. 10, Oslo.

J. Martens, Muralm. 1 Bergen

C & H CRICHTON LIMITED

LIVERPOOL · ENGLAND

TELEX NO. 62380. TELEGRAMS: "CRITON" LIVERPOOL

N. Hingley & Sons

(NETHERTON) Ltd.

Dudley

Phone 55301

Cables & Anchors

THE NORTH OF ENGLAND PROTECTING & INDEMNITY ASSOCIATION LTD.

(ESTABLISHED 1860)

J. N. BURRELL, Chairman

J. R. COWPER, O.B.E., Vice-Chairman

W. FERGUSON, General Manager

Head Office

Collingwood Buildings, NEWCASTLE UPON TYNE, 1

Newcastle 25221-3

Branches

CARDIFF—Crichton House, Mount Stuart Square — Cardiff 24014

GLASGOW—134, St. Vincent Street, C.2 — Central 5915

LIVERPOOL—123, Derby House, Exchange Buildings — Central 2914

LONDON—24, St. Mary Axe, E.C.3 — Avenue 1522

REPRESENTED AT ALL THE PRINCIPAL PORTS OF THE WORLD

ADMIRALTY CHARTS

The LATEST EDITIONS of Charts, Plans and Sailing Directions published by the Hydrographic Dept., can be obtained from

J. D. POTTER, LTD. Admiralty Agent for Charts Publisher of Nautical Books, and Bookseller.

145 MINORIES, LONDON, E.C.3.

Telephone: ROYAL 1369 Telegrams: ADCHARTS FEN LONDON Cablegrams: ADCHARTS LONDON

Large Stocks of Nautical and Technical Books of all descriptions

---

BLUE STAR LINE.....

express liner services to

AUSTRALIA
NEW ZEALAND
SOUTH AFRICA
SOUTH AMERICA
PORTUGAL &
NORTH PACIFIC

BLUE STAR LINE LTD.

Albion House, Leadenhall St., E.C.3 Passenger Office: 3 Lower Regent St., S.W.1

THE NEW ZEALAND SHIPPING COMPANY LIMITED

PASSENGER AND CARGO SERVICES

To New Zealand via Panama

Particulars from J. B. WESTRAY & CO. LTD.
138 LEADENHALL STREET, LONDON, E.C.3.
Tel.: AVEnue 5220

GELLATLY, HANKEY & Co. LTD.

CABLES: GELLATLY LONDON

1, LLOYD'S AVENUE
LONDON, E.C.3

TELEPHONES: ROYAL 7364 6 LINES ROYAL 1272 14 LINES
TELEX: 22844

REGULAR SERVICES FROM UNITED KINGDOM TO EGYPT, RED SEA, INDIA, PAKISTAN, CEYLON, AFRICA, STRAITS & FAR EAST

FREIGHT · PASSAGES · FORWARDING · INSURANCE

LIVERPOOL, MANCHESTER, GLASGOW

PASSENGER OFFICE: 23, PALL MALL, S.W.1

MOSS HUTCHISON LINE LTD.

REGULAR FREIGHT SERVICES FROM LIVERPOOL, GLASGOW AND SOUTH WALES TO CASABLANCA AND MEDITERRANEAN PORTS. ALSO FRANCE, SPAIN AND PORTUGAL

For Freight apply to

MOSS HUTCHISON LINE LIMITED
P.O. BOX 96, MARTINS BANK BUILDING WATER STREET, LIVERPOOL, 2

GLASGOW
91, Bothwell Street, C.2

MANCHESTER
196 Deansgate.

LONDON
c/o THE GENERAL STEAM NAVIGATION CO. LTD
"Three Quays," Tower Hill, London, E.C.3
Tel: MINcing Lane 3000

PORT LINE

FREIGHT AND PASSENGERS

Regular Sailings

LONDON, LIVERPOOL, NEW YORK & CANADA

to

AUSTRALIA & NEW ZEALAND

PORT LINE LTD

CUNARD HOUSE, 88 Leadenhall Street, London, E.C.3

Phone Avenue 1270 Telegrams: "Portships London Telex"

ROYAL MAIL LINES

TO SOUTH AMERICA

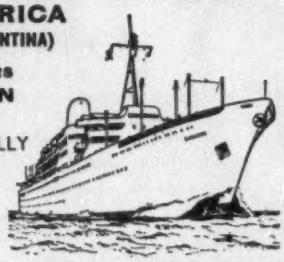
(BRAZIL · URUGUAY · ARGENTINA)

3 NEW PASSENGER LINERS

AMAZON · ARAGON

ARLANZA

each of 20,350 tons gross, FULLY AIR-CONDITIONED AND STABILISED, are now in service on the LONDON-SOUTH AMERICA route.



ROYAL MAIL LINES LTD

LONDON: Royal Mail House, Leadenhall Street, E.C.3
America House, Cockspur Street, S.W.1.

LIVERPOOL: Pacific Building, James St. (2)

BIBBY LINE

UNITED KINGDOM, CONTINENT MARSEILLES, EGYPT, SUDAN, CEYLON AND BURMA

All enquiries to:—

BIBBY BROTHERS & CO., Martins Bank Building, Water Street, LIVERPOOL 2

HOULDER BROTHERS & CO. LTD.

Shipowners, Insurance Brokers, Passenger & General Forwarding Agents (Sea and Air)

REGULAR FAST SERVICES to RIVER PLATE

From Liverpool, London, Bristol Channel & Antwerp and to SOUTH AFRICA

Head Office 53 LEADENHALL STREET, LONDON, E.C.3

Furness Lines

Freight and Passenger Services

FURNESS WARREN LINE

LIVERPOOL
to St. John's, Nfld, Halifax, N.S., and Boston.

FURNESS PACIFIC LINE

MANCHESTER and GLASGOW
to Los Angeles Harbour, San Francisco, Portland, Seattle, Victoria and Vancouver, B.C., via Panama Canal.

FURNESS GREAT LAKES LINE

NEWCASTLE to Cleveland, Detroit, Chicago and Milwaukee
LONDON to Toronto, Hamilton, Cleveland, Detroit, Chicago and Milwaukee

JOHNSTON WARREN LINE

ANTWERP, HAMBURG, SWANSEA and LIVERPOOL
to Piraeus, Volo, Thessaloniki, Izmir, Haydar Pasha, Istanbul, Black Sea, Roumanian and Danubian Ports.

FURNESS BERMUDA LINE

NEW YORK — Bermuda — Nassau Cruises.
Furness West Indies Cruises.

FURNESS RED CROSS LINE

NEW YORK
to Saint John, N.B. Halifax, N.S.
St. John's and Cornerbrook, Nfld.

For further information apply :

FURNESS, WITHY & CO. LTD.

Furness House, Leadenhall Street, London, E.C.3.

Telephone : ROYal 2525

Also at LIVERPOOL, GLASGOW, NEWCASTLE, MIDDLESBROUGH, LEITH and GRANGEMOUTH.

PRINCE LINE

MANCHESTER, MIDDLESBROUGH
ANTWERP and LONDON to
MALTA CYPRUS ISRAEL
and
TUNIS LIBYA EGYPT LEBANON SYRIA TURKEY
also Leith, Newcastle and Southampton
subject to inducement.

For further information apply :

PRINCE LINE LTD., 56 Leadenhall St., London, E.C.3

Telephone : ROYal 2525

GOUGH & CROSTHWAITE LTD., 22/24 Booth St., Manchester 2

Telephone : CENtral 7705

SHIP REPAIRS — MONTREAL

ENGINE, BOILER AND HULL

J. & R. WEIR LIMITED
Established 1875

Un 6-5401
Nights & Holidays
Un 6-5138 & RE 8-9782

33 NAZARETH STREET
MONTREAL

Cables:
"Weirmon"
Montreal

JACOBS & PARTNERS LTD.
OIL BROKERS

CARGOES
CRUDE OIL and PETROLEUM PRODUCTS

OIL BUNKERS

STONE HOUSE, BISHOPSGATE,
LONDON, E.C.2.

Telephone:
BISHOPSGATE
8466/8 - 7545/7

TELEX No. 22577
" " 24386

Cables:
CASAPETRO
LONDON, E.C.2

EX-ADMIRALTY **SEXTANTS & BINOCULARS** 14 DAYS FREE TRIAL

New condition HUSUN MICROMETER SEXTANTS £28 10 0
7 x 50 U.S. NAVY PRISMATIC NIGHT GLASSES
Cost approx. £60. Perfect condition, with case £22 0 0
6 x 30 TAYLOR HOBSON PRISMATICS £7 15 0

CHARLES FRANK LTD.
67-75 SALTMARKET, GLASGOW, C.1. Phone: BELL 2106/7
Established 1907 Send for illustrated catalogue

SITUATIONS VACANT

Assistant Naval Architects and Ship Draughtsmen required as additions to existing staff

Assistant Naval Architects should have first-class training in ship design and construction, and good qualifications covering at least H.N.C. Ship Draughtsmen should have good general experience in steelwork and outfit.

Working conditions are ideal and suitable candidates will be interviewed by arrangement.

Please supply full particulars of age, experience, qualifications, salary required, etc., to:

BURNESS, CORLETT & PARTNERS LTD.,
WORTING HOUSE, BASINGSTOKE, HANTS

DEPUTY TRAFFIC MANAGER with wide experience export shipping and forwarding wanted by progressive company with rapidly expanding world wide export business. Good salary. Apply Box No. DT 401, THE SHIPPING WORLD, 127, Cheapside, London, E.C.2.

Frigates, Tugs, Shallow Draft Vessels
& Yachts
High Pressure Water Tube Boilers.
for Power Stations and Industrial Plants

YARROW & CO. LTD

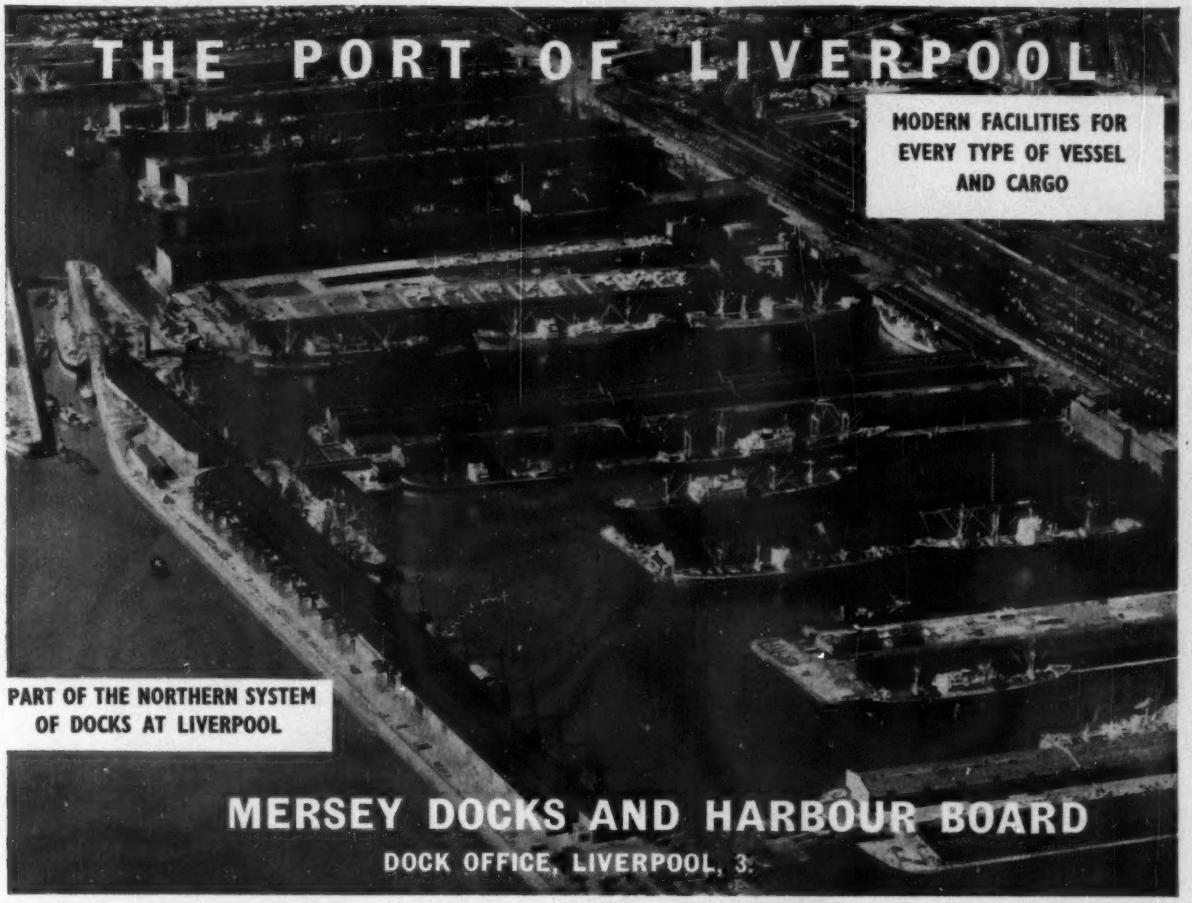
SCOTSTOUN · GLASGOW · W4

SHIPBUILDERS
ENGINEERS
BOILERMAKERS

NEW SHIPS
Requiring Stores, Provisions, Towage, etc., for any Port consult
A. E. SHEPPARD & CO., LTD.
World Wide Information Service
BEVIS MARKS HOUSE, LONDON, E.C.3.
'Phone: Avenue 2671/2 *Cables:* Aessalports, London

INDEX TO ADVERTISERS IN THIS ISSUE

	Page
Agence Maritime Internationale	A21
Bank Line	A5
Barnard & Sons Ltd.	A14
Bibby Bros. & Co.	A19
Blue Star Line Ltd.	A18
Blundell & Crompton Ltd.	A21
British European Airways (Freight)	A16
Burmeister & Wain A/S	Front Cover
Cantieri Navali Riuniti	A2
Chemstrand Ltd.	A9
Cowal Engineering Co. Ltd.	A4
Crichton Ltd., C. & H.	A18
Decca Navigator Co. Ltd.	A10
Donkin & Co. Ltd.	A13
Frank Ltd., Charles	A23
French Somaliland Shipping Co. Ltd.	A14
Furness Withy & Co. Ltd.	A19
Gellatly, Hankey & Co. Ltd.	A18
Gibson & Co. Ltd., E. A.	A16
Hingley & Sons (Netherton) Ltd., N.	A18
Holoplast Ltd.	A17
Houlder Brothers & Co. Ltd.	A19
Jacobs & Partners Ltd.	A20
Lamont & Co. Ltd., James	A12
MacAndrews & Co. Ltd.	A5
McGeoch & Co. Ltd., Wm.	A4
Marconi International Marine Communication Co. Ltd.	A6
Mersey Docks & Harbour Board	A21
Moss Hutchison Line Ltd.	A18
New Zealand Shipping Co. Ltd.	A18
North of England Protecting & Indemnity Association Ltd.	A18
Peters & Co. Ltd., G. D.	A12
Port Line Ltd.	A19
Potter Ltd., J. D.	A18
Power Petroleum Co. Ltd.	A15
Prince Line Ltd.	A19
Royal Mail Lines Ltd.	A19
Sabena (Belgian World Airlines)	A4
Saunders-Roe Ltd.	A3
Semtex Ltd.	A11
Shell Chemical Co. Ltd.	A8
Sheppard & Co. Ltd., A. E.	A20
Swan Hunter & Wigham Richardson Ltd.	Back Cover
United Baltic Corporation Ltd.	A5
United States Lines Co.	A7
Verf Van Vettewinkel	A14
Weir & Co. Ltd., Andrew	A5
Weir Ltd., J. & R.	A20
Yarrow & Co. Ltd.	A20


THE PORT OF LIVERPOOL
MODERN FACILITIES FOR EVERY TYPE OF VESSEL AND CARGO
PART OF THE NORTHERN SYSTEM OF DOCKS AT LIVERPOOL
MERSEY DOCKS AND HARBOUR BOARD
DOCK OFFICE, LIVERPOOL, 3.

Compagnie Maritime Belge Belgian Line — **Compagnie Maritime Congolaise** Belgian African Line

REGULAR SAILINGS

From **Antwerp** to Congo, Lobito, East and South West Africa, North and South America, Persian Gulf;

Also from other North Continental Ports to: South America, Red Sea and Persian Gulf;

And from Matadi and Angola to New York

AND VICE VERSA.

Through Bill of Lading Service to all localities in Congo via Matadi, Lobito, Dar-es-Salaam, Mombasa, Beira; also to Northern Rhodesia via Lobito, including port clearance, railage from port of discharge.

HOMEWARDS

Regular and direct sailings from Matadi and Pointe Noire to Hamburg, Bremen, Rotterdam, Amsterdam, Antwerp.

Regular and direct sailings from the Persian Gulf to Liverpool, Avonmouth, London, Le Havre, Hamburg, Rotterdam, Antwerp.

Managing Agents:

AGENCE MARITIME INTERNATIONALE S.A.

Antwerp Meir 1 — **Brussels** 41, Cantersteen

AGENTS IN UNITED KINGDOM:

London: ELDER DEMPSTER LINES Ltd.—Congo and Angola Service
H. MACLAINE & Co. (LONDON) Ltd.—North and South American Services
MCGREGOR, GOW & HOLLAND Ltd.—East and South West Africa Service; Persian Gulf Service
WALFORD LINES Ltd. { U.S.A.—Lobito Service; Antwerp—Rhodesia via Lobito Service; Rhodesia—Continent via Lobito Service

Avonmouth: MARK WHITWILL & SON Ltd.—Bristol

Liverpool: ELDER DEMPSTER LINES Ltd.—Congo Service
H. MACLAINE & Co. Ltd.—North and South America Services
MCGREGOR GOW & ROBINSON Ltd.—Middle East Service

AGENT IN NORTHERN RHODESIA:

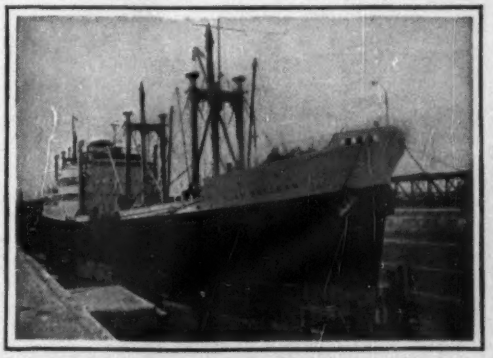
LEOPOLD WALFORD (C.A.) Ltd.
Collet House, King George Avenue—N'DOLA—P.O. Box 1567.

ESTABLISHED 1825

BLUNDELL & CROMPTON
LIMITED

ENGINEERS : SHIP REPAIRERS
COPPERSMITHS : FOUNDERS Etc.

Telephone: EAST 6001 & 3838 (8 lines) — *Telegrams:* Blundell, 'Phone, London



Specialists in
URGENT HULL AND MACHINERY REPAIRS
Sole Manufacturers
BLUNDELL 'ATMOS' VALVES
for Pressure and Vacuum Relief
FLAME ARRESTERS, ETC.

WEST INDIA DOCK ROAD, LONDON, E.14

Branch Works: TILBURY DOCKS, ESSEX. Telephone: Tilbury 2033

Published every Wednesday by the proprietors, THE SHIPPING WORLD LTD., at 127 Cheapside, London EC2 and Printed in Great Britain by the Press at Coombelands Ltd., Addlestone, Surrey. Registered as a newspaper